

ABSTRACTS

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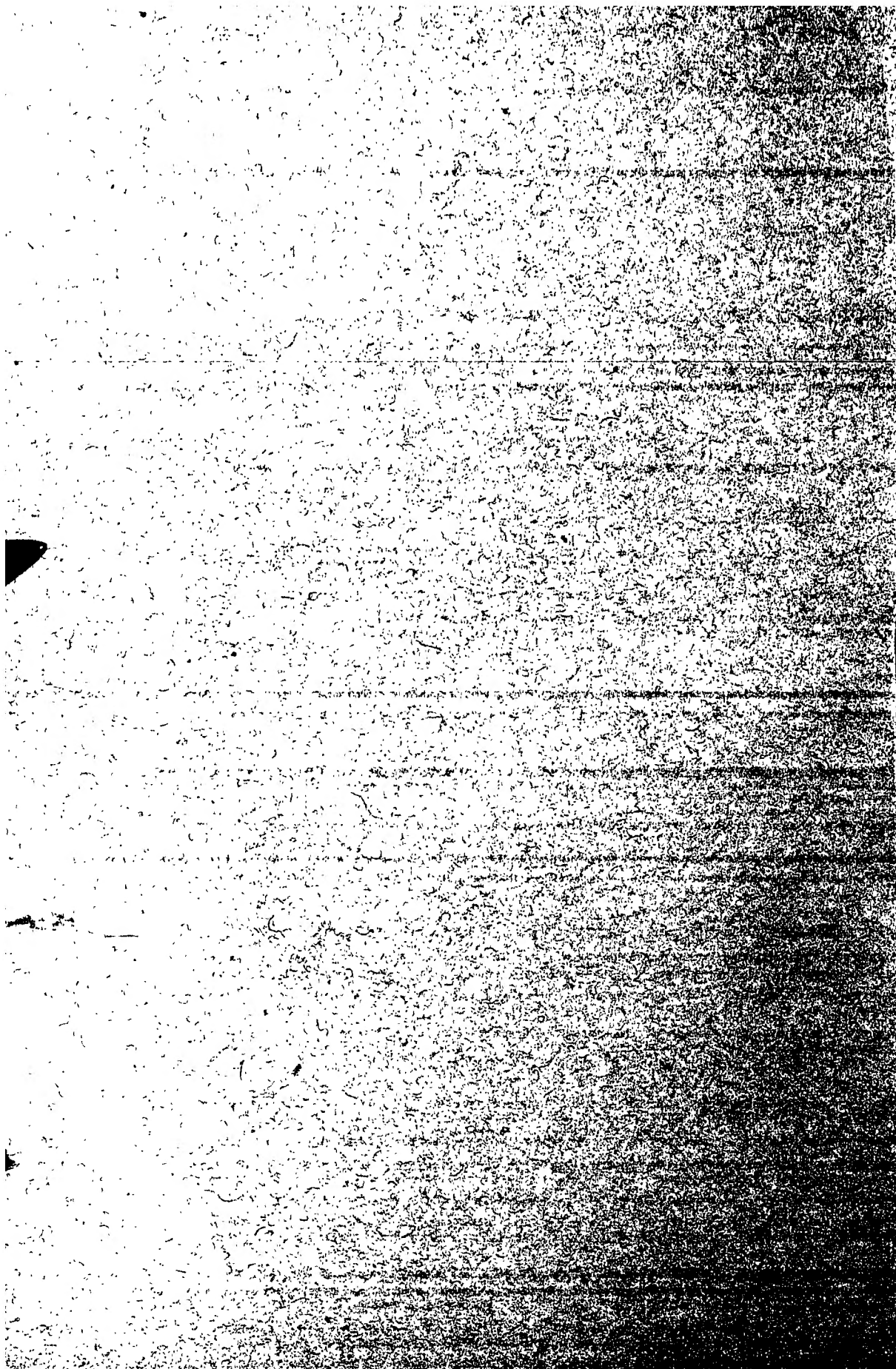
REPORTS ON TOWNSHIPS WEST OF THE FIFTH AND SIXTH MERIDIANS

(In the Province of Alberta and the Peace River Block, British Columbia.)

RECEIVED FROM SURVEYORS

BETWEEN JULY 1, 1913, AND JULY 1, 1914

Published by authority of the HONOURABLE W. J. ROCHE,
Minister of the Interior.



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NOTICE.

The following descriptions of townships recently surveyed have been prepared from the field notes and reports of the surveyors.

The townships in the pamphlet are placed in ranges, the number of the range being at the top of the page and the number of the township in heavy figures on the left side.

E. DEVILLE,

Surveyor General.

**LIST OF TOWNSHIPS, REPORTS ON WHICH ARE CONTAINED
IN THIS PAMPHLET.**

WEST OF THE FIFTH MERIDIAN.

<i>Township.</i>	<i>Range.</i>
4, 12, 67, 68, 69, 70, 71, 72, 73	1
8, 11, 14, 15, 67, 68, 69, 70, 72, 73.....	2
8, 10, 13, 14, 15, 16, 17, 66, 67, 68, 72, 73, 74.....	3
8, 16, 17, 18, 19, 20, 65, 66, 67, 72, 73, 74.....	4
8, 23, 65, 66, 72, 73, 74.....	5
72, 73, 74, 75, 76, 108.....	6
19, 73, 75, 76.....	7
72, 73, 75, 76.....	8
71, 72, 73, 74, 75, 76.....	9
60, 71, 72, 76.....	10
60, 72, 108, 109.....	11
108, 109.....	12
60, 108, 109.....	13
58, 59, 108, 109.....	14
58, 59, 60, 107, 108, 109.....	15
109.....	16
47, 48.....	17
47, 48.....	18
84.....	21
85, 86, 87.....	23
86, 87.....	24
86, 87.....	25
86, 87.....	26

WEST OF THE SIXTH MERIDIAN.

<i>Township.</i>	<i>Range.</i>
71, 72	1
71, 72	2
69, 70, 71, 73	4
69, 70, 71, 85, 86, 87, 88.....	5
69, 70, 71, 78, 79, 85, 86, 87, 88.....	6
85, 86, 87, 88.....	7
85, 86, 87, 88.....	8
69	9
69, 70	10

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 1.

• *(Partial.)*—This township can be reached by either one of two excellent wagon trails from Pincher Creek. The soil in the northeasterly two-thirds is of very fine character and ranges from a rich, black loam to a sandy loam, and results, where tried, show it to be highly productive. Some homesteaders have succeeded in raising an excellent quality of timothy hay and vegetables, the latter having been grown in section 36 where summer frosts are not so severe and frequent as in the westerly parts. The surface is quite mountainous in character in the westerly and southerly thirds, while the remaining part ranges from rolling to hilly. It is fairly well covered with small poplar and willow brush, but there is no timber of any commercial value excepting some spruce from 6 to 15 inches in diameter in the valleys of the southwesterly part which is included in the Rocky Mountains Forest reserve. There is no natural hay in this township, but ranching could be undertaken successfully as there is a fair amount of grass available for stock during the summer months, and this, together with the timothy that can be grown, would provide sustenance during the entire year. The water is fresh, permanent and plentiful, being supplied by two rather large streams, averaging 25 feet in width and 3 feet in depth, which traverse the central part, and also by many small streams which range from 1 to 3 feet in width and from 3 inches to 1 foot in depth, the current averaging about 2 miles per hour. The land is not liable to flooding, the larger streams being confined by cut banks about 40 feet in height. No water-power is available. There is plenty of dry spruce in the forest reserve which would provide excellent fuel, but no stone-quarries, minerals nor indications of coal were found. Trout are found in the streams and partridges are plentiful in this township.—*W. J. Boulton, D.L.S., 1913.*

(Partial.)—This township can be easily reached by good trails from either 12. Nanton, Stavely, High River or Cowley. The soil ranges from black to sandy loam and should be highly productive, but summer frosts are quite prevalent and have prevented many agricultural experiments from being made. Ranching is the only industry which should be undertaken here. The surface varies from rolling to hilly prairie and is covered with patches of willow brush and poplar. There is no merchantable timber outside of the Rocky Mountains Forest reserve. There is a considerable amount of good rich grass, but no hay was seen. The water supply is fresh, permanent and plentiful, there being many small streams traversing the township. These vary from 2 to 5 feet in width and from 3 inches to 2 feet in depth, and have currents of about 1 mile per hour. No land is liable to be flooded and no water-powers exist. Wood for fuel is plentiful. No coal, minerals nor stone-quarries were observed. No game was seen.—*W. J. Boulton, D.L.S., 1913.*

The best route into this township is by train from Edmonton into section 67. 24, township 68, range 2, over the Edmonton, Dunvegan and British Columbia railway, thence easterly by pack-trail into section 21, township 68, range 1, and thence southerly into this township. There is also a good wagon road from Mirror Landing through township 68, range 2, which follows the general direction of the railway and from which the pack-trail branches in section 24. Owing to the extensive swamps in the western and southern portions of the township, it is not advisable to enter from the west or south. Sections 19, 20, 29 and 31, and part of

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 1.—*Continued.*

section 32 comprise one swamp; the west half of section 6, section 7, the south half of section 18, the south two-thirds of section 8, the greater portion of section 9 and the northwest part of section 4 comprise another; the east two-thirds of section 1, the south half of section 12, the east half of section 11, the north half of section 2 and about 160 acres in the east half of section 3 comprise the last of the three main swamps in the township. The soil in the higher portions of the township is black loam from 2 to 12 inches thick with a sand or sandy clay subsoil and is excellent for agriculture; in the muskegs and swamps the soil consists of peat. The surface is heavily timbered principally with poplar averaging 12 inches and balm of Gilead averaging 18 inches in diameter with willow and alder underbrush on the high ground; tamarack up to 18 inches in diameter is found in the swamps. Fresh water is plentiful throughout the township. The creeks in the southerly part are greatly affected by the rain, and in sections 7 and 8 disappear in the swamp. The surface water is moving all the time. Wood fuel is fairly plentiful. No hay meadows were seen, but excellent feed is found amongst the poplar. No water-powers, stone-quarries nor minerals were seen. The climate is somewhat similar to that of Edmonton and is without summer frosts. Game is plentiful; moose, bears and partridges abound and foxes were also seen.—*G. Z. Pinder, D.L.S., 1913.*

This township may be reached either from Edmonton over the Edmonton, Dunvegan and British Columbia railway, or from Mirror Landing over the wagon road into township 68, range 2, and thence easterly by pack-trail. There is one large swamp in the township which is exceedingly wet in parts and comprises the following sections and parts of sections: the east half of sections 6 and 7, the southeast portion of section 18, nearly all of section 8, the south half of section 17, the north half and the southwest quarter of section 5, the northeast and the southwest quarters of section 9, all of section 15, the east half of section 16, the west half of section 23, the southwest quarter of section 26, the southeast quarter of section 27, the east half and part of the southwest quarter of section 22. The soil is generally a rich black loam averaging 4 inches in depth with a subsoil of sand and clay containing a few stones in places, and it is very suitable for agriculture. Peat is found in the swamps and muskegs. The surface is very slightly rolling and is heavily timbered throughout with poplar, spruce and jackpine averaging 8 inches in diameter, and balm of Gilead averaging 12 inches, with heavy willow and alder. Tamarack up to 24 inches in diameter is found in the swamps. Fresh water and wood for fuel are fairly plentiful. There are no hay meadows but good feed may be found amongst all the poplar. No water-powers, stone-quarries nor minerals were seen. The climate is similar to that of Edmonton and is without summer frosts. Game is very plentiful, moose and bears being seen everywhere, also a few partridges and foxes.—*G. Z. Pinder, D.L.S., 1913.*

The best route into this township is over the Edmonton, Dunvegan and British Columbia railway from Edmonton. The surface is slightly rolling and very swampy. The only part of the township suitable for agriculture is the southeastern portion which is excellent, the soil consisting of from 4 to 6 inches of black muck with a subsoil of sandy clay. Sections 1, 2, 3, 4, the east half of section 5, sections 12, 11, 10, the east half of section 9, the portion of section 13 west of Rourke creek, section 14, the south half of section 15 and the east half of section 16 may be rated as first class; the remainder of the township has nearly all been burnt over and is very swampy, the soil consisting of peat with sand on the ridges. The green timber in the southern portion consists of poplar, balm of Gilead, birch and spruce up to 12 inches in diameter; there is also some good jackpine up to 14 inches in diameter on both sides of Rourke creek. There are very few creeks but an ample supply of fresh

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 1.—*Continued.*

water may be obtained from the swamps and muskegs. Wood for fuel is very plentiful. There are no hay sloughs and feed is very scarce except in the southeastern part of the township. No stone-quarries, coal nor minerals were seen and no water-powers exist. The climate is similar to that of Edmonton without summer frosts. Game is plentiful, bears, moose, deer, foxes and partridges being seen.—*G. Z. Pinder, D.L.S., 1913.*

The Edmonton, Dunvegan and British Columbia railway passes through the township and there is also a freight trail along the line. The soil throughout this township is light and sandy with patches of swamp or muskeg. There appears to be ample rainfall; and the ground, when cleared, should be suitable for mixed farming. The surface is fairly level back from the river valley but is rolling in places. It has been burned over to a large extent and there are large areas of windfall at present. In sections 4, 5 and 6 there is some good jackpine suitable for railroad ties; but apart from this, the rest of the timber has no value. There are no hay meadows. There is an abundant supply of fresh water. No water-power can be developed. The climate appears to be suitable for mixed farming and no signs of summer frosts were seen. There is a large supply of wood for fuel but no lignite veins were noticed. No stone-quarries nor minerals were found. Signs of moose, bears and the smaller fur-bearing animals were noticed.—*H. E. Pearson, D.L.S., 1913.*

The wagon road from Mirror Landing to Sawridge passes through this township. A large portion of the surface is covered with muskeg and marsh, with jackpine ridges interspersed, and the percentage of land suitable for agriculture is very small; it can, however, be easily drained. The surface is fairly level back from the river valleys. It is covered with swamp spruce and tamarack with jackpine bluffs. There is some good timber in timber berths Nos. 1377 and 1320, but some of this has been logged and some burnt. There is no hay land in this township. There is an abundant supply of fresh water in the Athabaska and Lesser Slave rivers. No water-powers can be developed. The climate appears to be suitable for mixed farming, although the presence of muskeg gives it a tendency to summer frosts. Wood for fuel can be obtained in every quarter-section. No stone-quarries nor minerals were found. Moose, bears and small game appeared to be plentiful.—*H. E. Pearson, D.L.S., 1913.*

This township can be reached from a wagon road which has been cut from the Mirror Landing-Sawridge road to a hay meadow in section 9; this road was continued to lake Peter this autumn by some half-breeds, but it is not passable for anything but empty wagons. The soil consists generally of from 3 to 6 inches of black loam with a clay subsoil and would be suitable for mixed farming if the land were cleared. The surface is undulating and wooded with spruce and poplar with patches of spruce and tamarack muskeg. This timber has no commercial value. There is a small hay meadow along the creek in section 9 from which about 30 tons of hay were cut by a homesteader; probably its area could be increased by a little clearing. There is an abundant supply of fresh water from the muskegs and small creeks. No water-power can be developed. The climate appeared to be suitable for mixed farming as there were no indications of summer frosts. Wood for fuel can be obtained in every quarter-section. There are no stone-quarries, lignite nor minerals in the township. Moose and small game were plentiful.—*H. E. Pearson, D.L.S., 1913.*

A good winter trail runs from Moose portage to the east end of Fawcett lake and a good summer pack-trail follows the south shore of the lake into this township. The soil, as a rule, consists of from 2 to 4 inches of black loam with a clay subsoil, although there are areas of low, swampy land in the westerly part of the township. It would be suitable for stock-raising or mixed farming if cleared.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 1.—*Continued.*

The surface is gently rolling with a good natural drainage to Fawcett lake and Fawcett river. There are large areas of brush and windfall which could be easily cleared with fire. Apart from a little spruce and poplar along the lake shore, there is no timber of any commercial value. There are no hay meadows. An abundant supply of fresh water is found in Fawcett lake. There are no waterfalls but a certain amount of power could be developed by the construction of dams on Fawcett river, which has a good fall and a rocky bed. The climate is suitable for mixed farming and when the land is drained there should be no danger of summer frosts. Wood for fuel is obtainable in every section, but no lignite veins were seen. No stone-quarries nor minerals of economic value were seen. Moose, rabbits, partridges, ducks and geese were seen in abundance, also signs of bears. Small fur-bearing animals seem to be plentiful.—*H. E. Pearson, D.L.S., 1913.*

RANGE 2.

8. (*Ranges 2 and 4.*)—Township 8, range 2, can be easily reached by excellent trails from Cowley, Lundbrok or Burmis, while township 8, range 4, is easily accessible from Frank, Coleman or Blairmore. The soil ranges from black to sandy loam in the valleys, but sand and gravel are found on the hilltops. Green feed, hay and roots can be grown in township 8, range 2, but it would not be advisable to attempt any further pursuits in agriculture on account of summer frosts. They are still more frequent in township 8, range 4, but the contour of the surface there would stop any attempts at agriculture. The surface of township 8, range 2, is practically open prairie, and varies from rolling to hilly, while that of township 8, range 4, is practically covered with willow brush, poplar, some spruce and jackpine, and is very rough, hilly and rocky, the southeast portion being especially so as it takes in Bluff mountain. There is plenty of spruce from 4 to 12 inches in diameter in sections 1 and 12, but it lies wholly on Bluff mountain, which is so rough, treacherous and precipitous that lumbering would be quite difficult. Township 8, range 2, is more or less generous in its supply of natural hay, but it is not of a very good quality. No hay was seen in that part of township 8, range 4, in which our work was carried on. There is plenty of good fresh water in both townships and the supply is permanent, many small streams traversing this area. The Crowsnest river, a stream about 25 feet in width, 2 feet in depth and with a current of about 3 miles per hour, cuts across the southerly part of township 8, range 4. No land is liable to be flooded and no water-power could be economically developed. There is no fuel in township 8, range 2, but plenty of dry spruce and willows are to be found in township 8, range 4. Some indications of coal were noticed in section 2, township 8, range 4, and mines are operating successfully at both Coleman and Blairmore, the former being in section 8, township 8, range 4, and the latter being adjacent to the south boundary of section 2, of the same township. No stone-quarries nor other minerals were noticed. Game is very scarce in this locality.—*W. J. Boulton, D.L.S., 1913.*

11. (*Partial.*)—(See the report on township 12, range 1, west of the Fifth meridian).—*W. J. Boulton, D.L.S., 1913.*

(*Partial.*)—The work in townships 14 and 15, range 2, was located in the **14 & 15.** western part and consisted in completing the subdivision, while that in townships 10 and 13, range 3, was to complete the subdivision of the parts lying immediately outside of the boundaries of the Rocky Mountains Forest reserve. Townships 14 and 15, range 2, and township 13, range 3, can be easily reached by excellent wagon trails from both High River and Nanton, while township 10, range 3,

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 2.—*Continued.*

is more easily accessible by first-class trails leading from Cowley or Lundbrek to The Gap. The soil in all these townships ranges from black to sandy loam, while there is in some places quite an amount of sand and gravel, particularly on the tops of the hills. It would produce grain and roots were it not for the early summer frosts which prevail here due to the close proximity to the Rocky mountains. Timothy and green feed can be grown successfully. The surface of the easterly half of townships 14 and 15 range 2, is more or less free from bush, and varies from rolling to hilly, but the remaining parts are practically covered with willow brush and small poplar, and range from hilly to rough, and in some places rather mountainous in character. Some spruce up to 24 inches in diameter is found in the southwesterly part of township 14. The surface of townships 10 and 13 is hilly and rough, generally speaking, and is mostly covered with willow brush and poplar; there are also some scattered clumps of spruce ranging up to 10 inches in diameter in township 10. Some splendid hay land is found in townships 14 and 15, range 2, along a sort of valley which runs north and south through the centre of both townships. No natural hay was noticed in townships 10 and 13. There is, however, plenty of good rich grass scattered through the bush parts and it supplies grazing for the stock of the local ranchers. The water is fresh, permanent and plentiful, many small streams ranging from 2 to 5 feet in width and averaging about 6 inches in depth running through the townships. Township 14, range 2, is traversed by Willow creek, a stream averaging about 25 feet in width and carrying about 1 foot of water in its bed during the summer months. Township 10, range 3, is cut in sections 34, 35 and 36 by the Oldman river, which averages about 1 chain in width and 3 feet in depth and has a current of about 3 miles per hour. The land is not liable to be flooded and there is no opportunity to economically develop any water-power in these townships. An ample supply of poplar and dry willow is found which can be utilized for fuel; but no coal nor lignite veins were noticed. No stone-quarries nor minerals were seen. It is reported that petroleum has been found in township 10, range 3. A small flow of natural gas was found in the northwest quarter of section 20, township 15, range 2. Plenty of game, such as fish (trout) and partridges, is found in these townships, while many deer range in township 10, range 3.—*W. J. Boulton, D.L.S., 1913.*

(*North two-thirds.*)—This township may be reached either by means of boats
67. from Thornton, a station on the Grand Trunk Pacific railway about 118 miles west of Edmonton, down the McLeod and Athabaska rivers, or by wagons from Mirror Landing, which is situated at the mouth of the Lesser Slave river and is reached from Edmonton by the Canadian Northern railway to Athabaska and thence by steamer. This autumn it will be possible to enter the township by rail direct from Edmonton by the Edmonton, Dunvegan and British Columbia railway. The country is somewhat swampy and fairly well timbered. The soil is of excellent quality and is suitable for agriculture, consisting of about 5 inches of rich black loam with a subsoil of sand and clay with very few stones. Peat is found in the muskegs. The timber is not of much commercial value and should be reserved for the use of settlers. It consists chiefly on the high ground of poplar averaging about 8 inches in diameter with spruce and tamarack in the swamps up to 18 inches in diameter, the large timber being very scattered. There is very little jackpine. There are not many creeks but an ample supply of good fresh water may be obtained from the swamps and muskegs. About a mile back from the west bank of the Athabaska river, the country is principally muskeg and swamp, and the same applies to the eastern portion. Wood for fuel is plentiful. There are small hay sloughs of good quality throughout the township, the most noticeable being in the south-



TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 2.—*Continued.*

west quarter of section 23, and feed is fairly plentiful. No water-powers were seen: The banks of the river, which varies from 20 to 30 chains in width, are about 12 feet high and rise to about 30 feet, 10 chains back from the river. The current varies from 3 to 4 miles per hour. The river is navigable, one of the Northern Transport Company's steamers having been up to the mouth of the Pembina river. There are two small fresh water lakes in this township, one in sections 24 and 25, and the other in sections 23 and 24. The former has neither inlet nor outlet, while the latter has two inlet creeks and one outlet creek. The climate is somewhat similar to that of Edmonton and there are no summer frosts. No coal, stone-quarries nor minerals were seen. Game is exceedingly plentiful; several bears, moose and deer were seen and marks of minks and lynxes were observed everywhere. Nine coyotes were seen in a pack and there are many partridges and sand-hill cranes. Fish were not very plentiful, although grayling, jackfish, gold-eyes and ling were caught. There is evidence everywhere that this country is frequented by hunters and trappers.—*G. Z. Pinder, D.L.S., 1913.*

(*Partial.*)--The best route into this township is by a wagon road from
68. Mirror Landing which is situated at the mouth of the Lesser Slave river.

This point may be reached by a branch of the Canadian Northern railway from Edmonton to Athabaska and thence by steamer. This fall it will be possible to enter the township by the Edmonton, Dunvegan and British Columbia railway, the distance from Edmonton being 105 miles. The township is composed principally of muskegs with jackpine ridges and the soil is not of much value for agriculture, consisting chiefly of sand with peat in the swamps. The timber consists mainly of jackpine up to 18 inches in diameter with some poplar; and spruce and tamarack up to 8 inches in diameter is found in the swamps. Some jackpine which should be reserved is found in the portion of the township between the river and a line passing through the centre of section 4, section 10 and section 34; on the east side of the river there is good tie timber between the railroad and the river, in sections 13, 14, 23 and 24, which, however, is being taken out by a contractor whose camp is situated in the southwest quarter of section 24. The western portion of the township is exceedingly wet, and there are many lakes and floating bogs. There are not many creeks but good water is plentiful in the muskegs and swamps. Wood for fuel is fairly plentiful. One good hay meadow was seen comprising nearly all the southeast quarter of section 21, but otherwise feed is not very plentiful. No water-powers were seen. The banks of the river are about 12 feet high, rising up about 30 feet in height from 10 to 20 chains back from the river. The river itself narrows down considerably, being on an average about 17 chains wide; it is navigable and the current is about 4 miles per hour. Crane lake is situated in sections 7 and 8 and there is also Bisset lake in section 34. These lakes have neither inlet nor outlet, are practically free from weeds and reeds and are surrounded by wet muskegs. The climate is similar to that of Edmonton without summer frosts. No stone-quarries, coal nor minerals were seen. Game is fairly plentiful; bears and moose being seen, also partridges. Fish are not very plentiful; jackfish and gold-eyes, however, were caught.—*G. Z. Pinder, D.L.S., 1913.*

The best route into this township is from Edmonton by the Edmonton, Dunvegan and British Columbia railroad. The surface is principally muskeg and swamp about 20 chains back from the river on either side. The soil consists of sand with very little top soil on the high ground, and peat is found in the swamps; it is not very suitable for agriculture. The timber is not of much account commercially, as it consists chiefly of poplar, spruce, jackpine and tamarack averaging

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 2.—*Continued.*

6 inches in diameter with a few small patches up to 16 inches in diameter. A fire which has passed through the township east of the river has killed most of the timber. A considerable number of railroad ties have been cut in sections 1 and 12. The Athabaska river averages about 15 chains in width, has a current of about 3 or 4 miles per hour and is navigable. There are not many creeks but there is an ample supply of fresh water from the muskegs and swamps which are flooded after a heavy rain. There are no hay meadows and the only feed to be found is amongst the poplar within a quarter of a mile of the river banks. There are no water-powers, stone-quarries nor minerals. The climate is somewhat similar to that of Edmonton without summer frosts. Game is fairly plentiful, bears, foxes and moose being seen, also partridges. Fish are not very plentiful; jackfish, gold-eyes and ling were caught, however.—*G. Z. Pinder, D.L.S., 1913.*

At the present time the only way of reaching this township is by the Athabaska river. The township is practically all swamp or muskeg and until drainage is carried out it is useless for agriculture. The surface is level and covered with small swamp spruce and tamarack with a few patches of jackpine, spruce and poplar of no commercial value. There is no hay land. A plentiful supply of fresh water is found in every quarter-section and the land is not liable to be flooded. There are no water-powers. The climate is good and no signs of summer frosts were seen. Wood for fuel is found in abundance on every quarter-section but no lignite veins were seen. There are no stone-quarries nor minerals of economic value. Small game was observed, also signs of moose.—*H. E. Pearson, D.L.S., 1913.*

The surveyed trail between Mirror Landing and Sawridge follows the north side of the Lesser Slave river through this township. This is a good trail except during the wet season, but is passable with loads at all times. With the exception of a narrow strip along the streams, this township is nearly all muskeg and will be of little use until drained. It is timbered throughout with a more or less worthless growth of timber consisting principally of spruce and tamarack. Very little hay occurs. The township is well watered by the Lesser Slave, Sauteux, Fawcett and Driftwood rivers. This survey being made in the late winter, it was impossible to gauge the depth or volume of water in these streams, but from observations made later in the season, they all seem to vary greatly according to the season. The Fawcett and Driftwood rivers, especially, rise and fall very suddenly, but there does not appear to be much danger of serious flooding from any of these streams. It is quite possible that a limited amount of water-power could be developed on Lesser Slave river as there are a number of rapids. The climate appears to be suitable for farming and very similar to that at Edmonton. Wood for fuel is abundant everywhere. No stone-quarries nor minerals of economic value were noted. Game is scarce and consists of a few moose and bears.—*W. H. Waddell, D.L.S., 1913.*

(*Partial.*)—At the time of making this survey (April) the Driftwood river was used as a road and from it a sleigh road was cut westerly through sections 9, 8 and 7. There is very little soil suitable for farming in its present condition, a very large part being composed of muskegs, while in the northwest part there is considerable gravel. The township is timbered throughout, spruce and tamarack occurring in the muskegs and swamps, and poplar and spruce on the higher portions with a small quantity of jackpine. This timber is of a comparatively worthless nature, being too small for commercial purposes. Practically no hay was noted. The Fawcett and Driftwood rivers traverse the easterly half of the township. These streams average about a chain in width, and at the time of making the survey were very low,

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 2.—*Continued.*

but they are subject to sudden extremes of high and low water, being fed by small streams from the range of hills or mountains to the north. As both streams have well-defined banks, there appears to be little danger of serious floods. Neither stream is large enough for the development of power in commercial quantities. General indications point to a climate similar to that at Edmonton. Wood for fuel is plentiful in all parts of the township. No stone-quarries nor minerals of economic value were noted. A few moose and bears were the only game seen.—*W. H. Waddell, D.L.S., 1913.*

RANGE 3.

(*Partial.*)—This township is readily accessible from Frank, Blairmore or 8. Bellevue. The soil is more or less sand or gravel and is rendered unfit for agriculture by many high ridges of limestone which traverse the township. The surface is practically covered with green and burnt jackpine and spruce, and varies from hilly to mountainous in character. There is no merchantable timber outside of the Rocky Mountains Forest reserve. No hay was seen. The water supply is fresh, permanent and plentiful, there being many small streams flowing through the township. Gold creek flows along the western side of the township, and is 20 feet wide, 1 foot deep and has a current of about 3 miles per hour. No land is liable to be flooded and no water-powers are available. Some indications of coal were noticed along the valley of Gold creek, and a coal mine was opened at Lille but as it proved unprofitable it has been abandoned. Dry wood for fuel is plentiful. No game was seen in the township.—*W. J. Boulton, D.L.S., 1913.*

10 & 13. (See the report on townships 14 and 15, range 2, west of the Fifth meridian.)—*W. J. Boulton, D.L.S., 1913.*

(*Partial.*)—Splendid wagon trails provide means of access to this township, 14. both from the town of High River and Nanton. In the township itself there are two well-beaten trails, the one running in an east and west direction along Willow creek and the other taking a north and south course along the easterly side of the township. The soil varies from black to sandy loam and although it would be highly productive no one has ventured to undertake grain-growing or any other agricultural pursuit on account of the early summer frosts which prevail. The surface is practically covered with poplar and willow brush and is extremely rough and hilly. There is an abundance of rich grass in the valleys and this is used for grazing by a few ranchers. The water is fresh, permanent and quite plentiful, being supplied by numerous small streams and one rather large one, called Willow creek, which varies from 15 to 25 feet in width and 2 feet in depth during the summer months. This stream is quite rapid, but the volume of water passing through, when taken into consideration with the fall which could be economically obtained, would not merit any expenditure for water-power development. The land is not liable to be flooded. There is an abundance of fuel in the form of wood, such as poplar, but no coal veins were noticed. There are no stone-quarries nor minerals. Plenty of mountain trout and partridges are found. The township is not at all suitable for farming but the ranching industry might be successfully undertaken.—*W. J. Boulton, D.L.S., 1913.*

(*Partial.*)—This township can be easily reached by an excellent trail from 15. High River. It divides at the north boundary of township 16, range 2, and gives two entrances, one by way of township 15, range 2, and the other through township 16, range 3. The soil varies from black to sandy loam and would produce excellent grain and roots if it were not for the early summer frosts which pre-

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 3.—*Continued.*

vail owing to the close proximity of the Rocky mountains. The surface of this township is very rough and hilly, and in some places, mountainous in character, and is covered mostly with willow brush and small poplar. There is no merchantable timber to speak of excepting a few scattered spruce. In the valleys is found an abundance of rich grass which supplies good grazing for the stock belonging to a few ranchers who have leases. The water is fresh, permanent and plentiful. Many small mountain streams, varying from 2 to 5 feet in width and from 6 inches to 2 feet in depth, provide an ample supply for the ranching industry. The land is not liable to be flooded to any extent as the creeks are immediately confined by banks ranging from 3 to 10 feet in height. No water-power can be developed. There is an abundance of dry willow and poplar for fuel which is distributed uniformly throughout the township. There are good indications of coal in the southwesterly portion of this township, and one seam of steam coal, 4 feet thick, is found in section 6, approximately, its strike being a little west of north. There are no stone-quarries or minerals, other than the coal referred to. Mountain trout and partridges are numerous. The township is suitable only for ranching and it would not be advisable for any person to take up land for agricultural purposes.—*W. J. Boulton, D.L.S., 1913.*

16. (*Partial.*)—This township is easily accessible from the more settled parts and can be reached by an excellent wagon trail directly from High River, the distance being about 30 miles. Other trails in this township made by ranchers and timber seekers provide excellent means of travelling to practically any desired point. The soil is generally a rich black loam, and results show that it is very productive, but there are few who have tried to raise anything except green feed for their stock, further attempts in agricultural pursuits being abandoned on account of the early summer frosts which are prevalent. Three-fourths of the surface in the westerly and southerly halves is practically covered with willow brush and small poplar which would be quite difficult to remove; the remaining part is prairie. The large timber of any consequence is spruce, ranging up to 24 inches in diameter, and is confined to an area of about 25 acres in section 18. No hay of any consequence was seen, but there is an abundance of rich grass which provides an excellent means of sustenance for the cattle and horses belonging to the local ranchers. The ranching industry is the only one that will ever be successfully undertaken here. The water supply is fresh, permanent and plentiful, the township being provided with many small streams of an average width of from 2 to 4 feet and a depth of 1 foot. These streams ultimately connect with Pekisko creek which traverses the northerly sections of the township and is about 40 feet in width and about 2 feet in depth during the summer-time. The land is not liable to be flooded to any great extent as the creeks are immediately confined by banks ranging from 7 to 15 feet in height. No power of any consequence could be developed. There is considerable dry timber in the southwesterly portion of the township consisting of spruce and poplar and some jackpine. No coal seams were noticed. There are no stone-quarries nor minerals. Plenty of fish (trout) and partridges are to be found.—*W. J. Boulton, D.L.S., 1913.*

This township is readily reached from High River by a good wagon trail.

17. The soil consists for the most part of loam with a clay subsoil. The surface, with the exception of a few quarter-sections in the northern part is too rough for farming purposes. Moreover, owing to the high altitude and closeness to the mountains, farming could not be practised successfully. This township is, however, admirably adapted to ranching, which is being carried on successfully at

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 3.—*Continued.*

the present time. The township, for the most part, is hilly prairie, the southern part being covered with scattered scrub. There is no timber of any value, but some scattered scrub and poplar occur in the coulees. There are no large areas of slough hay, but the hills and valleys are covered with a good quality of wild grass, on which cattle and horses thrive well. The water is fresh and of a good quality, and the supply is permanent. Bull creek, which flows through the northern part of the township, has an average width of 6 feet, a depth of 18 inches and a current of about 1 mile per hour. There are a few smaller streams in the township and a small lake in section 27. No water-power can be developed. The climate is generally dry, but this season there has been plenty of rain, over 5 inches having fallen during June. Summer frosts are frequent. In the southeast part of the township, along Pekisko creek, poplar can be obtained for fuel. No coal seams nor minerals of economic value were found. There are plenty of stone-quarries located in this township and limestone outcrops occur in nearly all the hills. Petroleum has been found at Black Diamond to the northeast of this township and it is expected that the oil-bearing rocks also underlie this section of the country. Prospecting for oil has been carried on during the past season by several parties. Deer are often seen and all the smaller game, such as coyotes, rabbits and partridges, are very plentiful. The streams abound with mountain trout.—*S. L. Evans, D.L.S., 1913.*

This township is about three miles distant from the Edmonton, Dunvegan and 66. British Columbia railway, which is now constructed from Edmonton to Mirror Landing. There are no connecting trails between the township and the railway. A winter trail, used in the summer as a pack-trail, runs through sections 7, 18, 19, 30 and 31. This trail leads to the Klondike trail and is passable by wagons in early spring and late fall. The distance by trail southward to Holmes Crossing on the Athabaska river is about 50 miles. About one-half of the township is muskeg where the soil is humus. The soil in the remainder of the township is a black loam to an average depth of 5 inches with a clay or sandy clay subsoil. It is suited for mixed farming. The surface is level except in the vicinity of the Athabaska river. The central part of the township is muskeg and is timbered with spruce and tamarack of an average diameter of 8 inches. The sections adjoining the east, west and south sides of the township are timbered mainly with poplar up to 15 inches in diameter. Spruce, pine, birch, tamarack, willow and alder are scattered throughout. There is no timber of commercial value. No hay was seen. The water is all fresh, and the supply is sufficient and permanent. The Athabaska river flows through the southeast corner of the township. It has an average width of 20 chains with a current of 4 miles per hour and an average depth of 6 feet. The Akwinu river, which flows in a direction parallel to the Athabaska river through the central part of the township, has an average width of 20 feet and an average depth of 4 feet with a current of 1 mile per hour. The bottom is soft. No land is liable to be flooded. There are no water-powers. The climate is the same as that in the Edmonton district. No summer frosts were experienced. Wood only is available for fuel and may be obtained in all parts of the township. There are no stone-quarries nor indications of minerals. The kinds of game to be found are moose, bears, partridges, rabbits, ducks and geese.—*J. J. Stock, D.L.S., 1913.*

(*Partial.*)—A winter route, known as the Sawridge trail, passes through section 6 of this township. This trail branches off the Lesser Slave Lake trail about 18 miles south of the township. It is a fair pack-trail but impassable for wagons in the summer-time. This township, however, lies within 6 or 7 miles of the newly-constructed Edmonton, Dunvegan and British Columbia railway which is

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 3.—*Continued.*

now running construction trains from Edmonton to Mirror Landing, situated at the junction of the Lesser Slave and Athabaska rivers. The Athabaska river separates this township from the railroad and there are no connecting trails. The east half of the township is swamp and is not suitable for agriculture. It is impassable in the summer-time except on foot. The balance of the township, lying west of the Akuinu river and not included in the Lesser Slave Forest reserve, is fair land with a soil consisting of black loam of an average depth of 4 inches with a clay or sandy clay subsoil, and is suitable for mixed farming. The surface of the east half is timbered with spruce and tamarack up to 8 inches in diameter with occasional ridges of jack-pine. The balance of the township is timbered mainly with poplar of an average diameter of 6 inches. Spruce, jackpine and birch are scattered throughout. There is a considerable growth of willows along the Akuinu river. No marketable timber is found in the township. Along the Akuinu and Saulteux rivers in sections 28, 33 and 34, there is a hay marsh averaging 20 chains wide on both sides of the stream. This marsh at the time of survey was flooded to an average depth of 2 feet. However, judging from the nature of the hay which has a fine red top and considering that the season was wet, this flooding might be considered unusual. The water in the township is all fresh and the supply is more than sufficient and, it is to be feared, is only too permanent. The Akuinu river runs almost through the centre of the township and, keeping a northerly course, runs into the Saulteux river in section 33. This latter stream flows from the hills to the northwest. The Akuinu river has an average width of 30 feet, a depth of 4 feet and a current of 1 mile per hour. The Saulteux river has an average width of 50 feet, an average maximum depth of 7 feet and a current of 1 mile per hour. The bottoms of both this stream and the Akuinu river are soft. These rivers flood the land in sections 28, 33 and 34 with the exception of a small portion of high ground in the southeast quarter of section 34. The depth of water over the flooded land averages about 2 feet. There are no water-powers. The climate is the same as that of Edmonton. No summer frosts were noted. Wood alone is available for fuel and it is procurable in all parts of the township. There are no stone-quarries, and no minerals were noted except some bog-iron ore at a spring in the southwest quarter of section 3. The game consists of moose, caribou, bears, partridges, ducks and rabbits.—*J. J. Stock, D.L.S., 1913.*

(*Partial.*)—Sections 1 and 2 only of this township were subdivided, the balance
68. having been set aside as part of the proposed Lesser Slave Forest reserve. The only trail through the subdivided portion of this township is a surveyors' pack-trail which connects with the pack-trail along the high ground between this township and the Athabaska river. The pack-trail through this township is almost impassable. These sections are approximately 7 miles west of the newly-constructed Edmonton, Dunvegan and British Columbia railway, and about 3 miles west of the Athabaska river. The soil is generally humus, and is useless without drainage. The surface is timbered chiefly with spruce and tamarack up to 8 inches in diameter but no timber of commercial value is found here. There is no hay on these sections, which are practically swamps. No creeks exist, but the supply of water is sufficient, fresh and permanent. The land is not liable to be flooded. There are no water-powers. The climate is similar to that of Edmonton. No summer frosts were noted. The only fuel available is wood which may be obtained on the ridges. No stone-quarries nor indications of minerals were noticed. Moose, caribou, rabbits, partridges, ducks and grouse are the varieties of game which frequent this locality.—*J. J. Stock, D.L.S., 1913.*

This township is easily reached by the wagon road between Mirror Landing
72. and Sawridge which runs along the north shore of Lesser Slave river and passes through this township. The surface is practically level for about two

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 3.—*Continued.*

and a half miles back from Lesser Slave river. The level part of the township is mostly muskeg with a soil averaging up to about 8 inches of vegetable fibre over a very rich black muck and is covered with a growth of scrub spruce and tamarack. In sections 1, 2 and part of 11, this covering has been burnt off, exposing this rich soil, which, if drained, should make good agricultural land. The elevation of any part of the township is such that it can be easily drained. Along the north side of the Lesser Slave river, open patches of good meadow occur. Sections 3, 4, 5, 6, 7, 8, 9, 16, 17 and 18 are rolling, and are covered with poplar, spruce and birch with a good growth of grass. The soil here consists of about 5 inches of black loam with a sandy clay subsoil. Otawau river, which flows through this township into Lesser Slave river, averages about two and a half feet deep and 55 feet wide, and has a current of two and a half miles per hour with numerous rapids. Its banks are about 30 feet high. Good grass grows along the river in the drained area. The Edmonton, Dunvegan and British Columbia railway passes through sections 13, 14, 23, 22, 21, 28, 29 and 30 of this township. Wood for fuel is plentiful. No water-power is available. No coal nor economic minerals were found. Signs of moose and bears were seen.—*J. H. Johnston, D.L.S., 1913.*

73. From the Mirror Landing-Sawridge trail in township 72, range 3, we cut a wagon trail northerly through this township to section 33 and thence westerly, leaving the township in section 31. This trail is very soft in places and is impassable for heavy loads during the summer. A large part of the soil is of a muskeg nature, but that of the higher portions of the township is largely clay with a loam from 4 to 6 inches in depth in some places. This latter soil is probably fairly well suited for farming purposes, but the muskeg is useless in its present condition. The muskegs are timbered with spruce and tamarack from 2 to 8 inches in diameter while the upland is timbered with poplar and spruce from 4 to 12 inches with a few scattered birch and jackpine. Practically no hay is found in this township. While there are no large streams, there is a sufficient supply of good water in all parts of the township. There appears to be no danger of serious floods in the higher areas and it is possible to drain the muskegs. No water-power can be developed. General indications point to a climate suitable for farming purposes. Wood for fuel is to be found everywhere. No stone-quarries nor minerals were noted. Game appears to be scarce but there may be a few moose and bears.—*W. H. Waddell, D.L.S., 1913.*

(Sections 1 to 6.)—A wagon trail was cut from Saulteux Landing to a point **74.** on the Sawridge-Grouard trail in township 74, range 5. This trail crosses township 73, range 3, and from it the surveys in this township were made. It is very soft in places and is not suitable for heavy traffic except during the winter. The soil consists largely of muskeg and the higher portions have a clay or gravel soil which is not well adapted to farming purposes. The surface is timbered throughout with spruce, poplar, tamarack and some birch, ranging in diameter up to 6 inches. No hay was noted. A number of small streams with splendid water flow southerly through these sections but there appears to be little danger of serious floods as there is a considerable fall to the south. No water-power could be developed. General indications point to a climate similar to that of Edmonton. Wood for fuel is abundant in all parts. No stone-quarries nor minerals of economic value were noted. Game appears to be scarce and consists of a few moose and bears.—*W. H. Waddell, D.L.S., 1913.*

RANGE 4.

- 8.** (See the report on township 8, range 2, west of the Fifth meridian.)—*W. J. Boulton, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 4.—*Continued.*

16. This township is readily reached from the town of High River by a good wagon trail. The soil consists for the most part of loam with a clay subsoil. The surface is very hilly and rough, and lies at too high an altitude to permit of any farming operations being carried on. The hills and valleys are well covered with a good growth of grass and this, added to the prevailing mildness of the winters, ensures an excellent ranching country. Ranching is already carried on successfully here. Sections 11, 12 and 13 are covered with burnt spruce and poplar with patches of open country. Large patches of open country mixed with areas of burnt spruce and poplar lie in sections 25, 26, 27, 28, 33, 34, 35 and 36. This district was burnt over in 1910 and practically no green timber of any value escaped the fire, but young poplar and spruce are now springing up over the burnt places. There are no large areas of slough-hay, but the hills are well covered with wild grass with plenty of vetch and pea-vine. The water is fresh and permanent. Pekisko creek, a tributary of the Highwood river, runs through the southeastern part of the township. This stream has an average width of 12 feet, a depth of two and a half feet, and a current of about 4 miles per hour. Miller creek, in the northern part of the township, has an average width of 10 feet, a depth of 2 feet and a current of about 3 miles per hour. Several smaller streams feed these two larger ones. A small amount of power could be developed. The climate is generally dry during the summer months, but there was plenty of rainfall this past season. Summer frosts are frequent. There is plenty of standing dead spruce and poplar for fuel in the southern part of the township. No coal seams nor minerals of economic value were found. Outcrops of good building limestone occur along Pekisko creek and in all the hills in this township. Game is plentiful and consists of deer, mink, rabbits and partridges.—*S. L. Evans, D.L.S., 1913.*

(*Partial.*)—This township is readily reached by a good wagon trail along the Highwood river from the town of High River. The soil consists generally of loam with a clay subsoil. The township is too hilly and at too high an altitude for grain-growing. It is ideally suitable for ranching purposes, and already ranching is being carried on successfully. The surface is hilly and, with the exception of the valley of the Highwood river which is mostly open prairie, is covered with scattered small poplar. The sections subdivided contain no timber of any commercial value. The country has been burnt over in recent years and young poplar is springing up over the burnt areas. There are no large areas of slough-hay suitable for cutting. However, cattle and horses range the year round and the prospective rancher has no need of putting up large quantities of hay for feed. There is plenty of good fresh water. The Highwood river runs through the southeastern part of the township. This river has an average width of 2 chains, a depth of 4 feet and a velocity of 4 miles per hour. Being a mountain-fed stream, its volume is subject to large variations throughout the season. Trap creek, in the north part of the township, has a width of 35 feet, a depth of two and a half feet and a velocity of 4 miles per hour. There are also a few smaller streams in the township. No land is liable to be flooded by these streams. In section 10 there is a series of small falls and rapids on the Highwood river. There is possibly a fall of 30 feet in less than a quarter of a mile and no doubt by the construction of dams, considerable power could be developed. The climate is generally dry, but this year the rainfall has been plentiful. Summer frosts are frequent. Vegetables, such as potatoes and onions, have been grown in the valley of Highwood river. There is plenty of poplar and burnt spruce and pine for fuel. No coal seams have yet been located nor have any minerals of economic value been found. Deer, coyotes, rabbits and partridges are plentiful. The streams abound with trout.—*S. L. Evans, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 4.—*Continued.*

- (*Partial.*)—This township is reached from the town of High River by a good wagon trail along the Highwood river, and thence by the Sullivan Creek trail.

18. This latter trail is very hilly and is in poor condition. The soil on the whole, is very stony and consists of loam with a clay subsoil. Only a small quantity of earth covers the underlying strata of rock, and limestone and sandstone outcrop on all the hills and ridges. This township is too rough and hilly for farming operations and is adapted only to ranching. The only open land is in the valley of Sullivan creek, the balance of the township being covered with small poplar and burnt spruce and pine. There is no valuable timber. The country in this vicinity was burnt over several years ago, and again in 1910. Small poplar, spruce and pine have sprung up over the burnt areas and range from 4 to 7 inches in diameter. Much of the burnt spruce and pine is still standing. There is no slough-hay. The hills and valleys are covered with a good growth of grass on which cattle thrive well. It might be mentioned that this particular township is troubled with a poisonous weed which is very destructive, killing the cattle which eat it. Horses will not eat the weed. Ranchers, having cattle ranging in the township, have lost several head from this cause during the past season. The water is fresh and abundant. The main stream in this township is Sullivan creek which has an average width of 15 feet, a depth of 30 inches and a velocity of three and a half miles per hour. There are also several smaller streams. The volume of Sullivan creek is variable during the season owing to the fact of its being a mountain-fed stream. No land is liable to be flooded. No large quantity of power could be developed on account of the smallness of the streams. The climate is generally dry. However, there has been an abundant rainfall this year. Summer frosts are frequent. Fire-killed spruce and pine for fuel are plentiful. No coal seams have yet been found. Sandstone and limestone of good quality outcrop on all the hills. Iron ore in the form of hematite is found in the township. Some claims are reported to have been staked. Deer are occasionally seen and there are plenty of coyotes, rabbits and partridges in the district. There is an abundance of trout in Sullivan creek.—*S. L. Evans, D.I.S., 1913.*

(*East third.*)—This township can be easily reached by a good wagon trail from the town of Okotoks. The soil consists mostly of loam with a clay subsoil. The sections subdivided, being rather too hilly for farming purposes, are suitable for ranching. Oats can be ripened at the altitude of this township. The portion of the township which we surveyed is mostly covered with small poplar and spruce up to about 6 inches in diameter with willow scrub, there being no timber of any commercial value. There is no slough-hay. The hills and valleys are covered with a good growth of grass on which cattle and horses thrive well. There is plenty of fresh water and the supply is permanent. The south branch of Sheep river runs through sections 23 and 24. This river has an average width of a chain and a half, a depth of 4 feet and a velocity of about 4 miles per hour. Being a mountain-fed stream, its volume varies greatly through the different seasons of the year. There are also several small streams throughout the township. No land is liable to be flooded. By the construction of dams considerable power could be developed on the south branch of Sheep river as it flows very swiftly and has considerable fall. No falls of any size occur in the township. The climate is generally dry but there has been an abundant rainfall during the past season. Summer frosts are not uncommon. There is plenty of wood for fuel. Coal can be procured along Sheep river in the western part of the township, but there are no coal seams in the part subdivided. Limestone of good quality outcrops along Sheep river in sections 23 and 24. Petroleum and natural gas are found in this district. In township 19, range 2, the Black Diamond well, in which oil has

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 4.—Continued.

been found during the past season, is located. No doubt oil will be found in this township. Coyotes, rabbits and partridges are the principal game found. Deer are found to the west of this township. Trout can be caught in Sheep river.—*S. L. Evans, D.L.S., 1913.*

(Partial.)—This township can be easily reached by a good wagon trail up the north branch of Sheep river from the town of Okotoks. The part subdivided is too rough for farming purposes and is covered with small poplar and pine. There is no large timber of commercial value. This vicinity has been fire-swept in recent years, and a growth of young poplar and spruce is now springing up. The soil consists of black loam with a clay subsoil and is suitable for ranching. There is no hay that could be cut in the sections subdivided. There is plenty of fresh water and the supply is permanent. Ware creek flows through sections 19, 20, 21 and 22. This stream has an average width of 12 feet, a depth of 2 feet and a velocity of three and a half miles per hour. There are several smaller streams in the part subdivided. No land is liable to be flooded. No water-power could be developed on the streams mentioned above. There is generally a shortage of rainfall in this district but this season there was plenty. Summer frosts are frequent. Wood is plentiful for fuel but no coal seams were found in the sections subdivided, although in the western part of township 21, range 5, coal is reported as having been found along the north branch of Sheep river. Limestone and sandstone outcrops occur along the north branch of Sheep river. No minerals of economic value have been discovered. There has been a considerable rush for oil claims in this section as it is believed that petroleum-bearing strata underlie this portion of the country. The game consists of deer, coyotes, rabbits and partridges.—*S. L. Evans, D.L.S., 1913.*

65. A trail, known as the Sawridge trail and which supposedly runs to a point on the Little Slave river, enters this township in section 4 and leaves in section 36. The trail is an old one and was formerly a pack-trail; it has been cut out wide enough for the use of sleighs. It is almost impassable for wagons in the summer-time. This trail branches into the Lesser Slave Lake trail at a point about 6 miles south of the township. The other trails are merely surveyors' pack-trails. The Lesser Slave Lake trail to Holmes Crossing is a poor one. There are many soft places and part of it is quite hilly. The soil in the township is good. It is generally a layer of black loam of an average depth of 6 inches with a clay subsoil and is suitable for mixed farming. The surface is rolling and timbered mainly with poplar of an average diameter of 6 inches. There is also considerable willow scrub. Spruce up to 20 inches in diameter is found here and there in small clumps. A few birch and jackpine are also found in places. From 10 to 15 per cent of the township is muskeg which is timbered with spruce and tamarack of an average diameter of 6 inches. There is no timber of any marketable value in the township. Hay in small quantities is found along the many small creeks. The water in the township is fresh and the supply is sufficient and permanent. No land is liable to be flooded. There are no water-powers. The climate is similar to that of Edmonton. Wood is the only available fuel. No stone-quarries nor indications of minerals were noticed. The game consists of moose, bears, rabbits, grouse and ducks. Indications of caribou were also seen.—*J. J. Stock, D.L.S., 1913.*

66. This township lies about 6 miles west of the Athabaska river and is approximately 9 miles distant from the Edmonton, Dunvegan and British Columbia railroad which is now constructed from Edmonton to Mirror Landing. There are no connecting trails between the township and the railway. A sleigh-road and pack-trail connects the township with the old Klondike trail. This sleigh road is

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 4.—*Continued.*

passable by wagons in early spring and late fall. By trail, the township is distant about 50 miles from Holmes Crossing, situated on the Athabaska river. The distance is approximately 40 miles from Holmes Crossing to the point on the Edmonton, Dunvegan and British Columbia railroad nearest to this township. The soil in this township is generally a layer of black loam to an average depth of 5 inches with a clay subsoil and is suitable for mixed farming. The surface is rolling and timbered mainly with poplar of an average diameter of 6 inches. Spruce, tamarack, birch, alder and willow are scattered throughout. There is no timber of commercial value. No hay was seen. The water is all fresh and the supply is sufficient and permanent. There are numerous small creeks in the township, also a lake in the northwest corner of section 21. The land is not liable to be flooded. No water-power can be developed. The climate is the same as that in the vicinity of Edmonton. No summer frosts were noted. Wood only is available for fuel and may be obtained in all parts of the township. There are no stone-quarries nor indications of minerals. The game consists of moose, bears, rabbits, ducks and partridges.—*J. J. Stock, D.L.S., 1913.*

(*Partial.*)—Sections 1, 2, and 12 only, of this township were subdivided, the balance having been set aside as part of the proposed Lesser Slave Forest reserve. A pack-trail and sleigh road enters the township in section 12. The trail within the part of the township subdivided is good and joins the old Lesser Slave Lake trail at a point about 20 miles to the south, but it is almost impassable for wagons in the summer-time. This township is about 15 miles west of the newly-constructed Edmonton, Dunvegan and British Columbia railway; and the Athabaska river lies between. A winter road could be constructed very cheaply between this township and the railroad, but a summer road would be very costly. The soil is a layer of black loam of an average depth of 8 inches with a clay subsoil and is suited for mixed farming. The surface is timbered mainly with poplar and balsam of Gilead running up to 20 inches in diameter; spruce and birch are scattered throughout and there is considerable willow and alder underbrush; but there is no timber of marketable value. There is no hay on this part of the township and the land is not liable to be flooded. Water is obtainable by digging to a reasonable depth on almost all quarter-sections. There are several small creeks and the supply of water is fresh, apparently sufficient and permanent. There are no water-powers and no summer frosts. The climate is similar to that of Edmonton. Wood is the only available fuel and may be procured anywhere. There are no stone-quarries nor indications of minerals. Moose, caribou, partridges and rabbits are the game which frequent this locality.—*J. J. Stock, D.L.S., 1913.*

(*North half.*)—The best route to reach this township is by the road from Mirror Landing to Sawridge which passes along the north shore of Lesser Slave river through sections 36 and 35. Another trail passes through section 31; this is a winter trail commencing at Stoney's on the Sawridge road and passing through to Mittsue lake. A surveyors' trail also enters the township in section 25 from range 3. The soil in this township is for the greater part a deep black muck overlain by muskeg. In the southerly parts of sections 21, 22 and 23 the elevation is higher and the soil consists of about 3 inches of black loam with a sandy loam subsoil. Around Mittsue lake the soil is about 3 inches of black loam over a stony clay subsoil. The surface is practically level, ascending to the south. The timber is mostly scrub spruce and tamarack except in parts of sections 22, 23, 24, 26 and 27 where the tamarack has a diameter up to 15 inches and the spruce up to 20 inches. Plenty of fresh water occurs in the creeks and in Mittsue lake. Hay is scarce; a little could be cut along a creek in section 23. Numerous signs of moose were seen. Mittsue lake

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 4.—*Continued.*

contains an abundance of fish, and in season ducks collect in great numbers. The Edmonton, Dunvegan and British Columbia Railway location line passes through sections 25, 26, 23, 22, 21, 20 and around the north side of Mittsue lake. Wood for fuel is plentiful. No stone-quarries, water-powers, minerals nor coal were found.—*J. H. Johnston, D.L.S., 1913.*

73. The main trail from Mirror Landing to Sawridge crosses the southern part of this township. This trail is impassable with heavy loads except during very dry seasons or in the winter. A new trail which was cut from Saulteux Landing runs northwest and crosses section 36 of this township, but it is also very soft in places. Excepting a narrow strip along the Lesser Slave river and another along the extreme north of the township, the whole township is muskeg and in its present condition unsuited for farming. The muskeg is timbered with a scrub growth of spruce and tamarack of little commercial value. Patches of poplar and white spruce occur along the north tier of sections but there is little of commercial value. A small patch of prairie was noted in section 31. Considerable hay of good quality might be cut in sections 2, 3, 4 and 9 along the north side of the Lesser Slave river and a small amount in section 31. A little was also noted along the east branch of Muskeg creek, but this lies very low and it is doubtful if it could be cut. Lesser Slave river flows through sections 2, 3 and 4. This stream averages about 3 chains in width and is from 3 to 15 feet deep. In the north half of the township there are a number of small streams which converge and form the east and west branches of Muskeg creek. These streams flow through a very flat country and in some places they split up and are lost in swamps and muskegs. All the muskeg portion of the township is very wet at present but appears to lie considerably above the level of Lesser Slave river so that in all probability it will be quite possible to drain the district. No water-power could be developed. The climate appears suitable for general farming purposes. Wood for fuel is plentiful in all parts of the township. No stone-quarries nor minerals of economic value were noted. Game appears to be very scarce.—*W. H. Waddell, D.L.S., 1913.*

(*South half.*)—A wagon trail from Saulteux Landing crosses sections 1 to **74.** 6 of this township. This trail is impassable for heavy loads, except in the winter when it is frozen. A rich black loam from 4 to 8 inches in depth covers most of the portion of this township subdivided, but in places no loam is found. There are also some areas of sand and gravel, but the greater part appears to be suitable for farming purposes. The surface is timbered throughout with a fairly heavy growth of poplar and spruce and some birch and tamarack averaging about 6 inches in diameter. Some good hay occurs in sections 6 and 7 along the creek through these sections. No other hay areas were noted. Numerous creeks which appear to have their source in Martin mountain, flow through this township. The water in these is of the very best quality and the supply appears to be permanent. There is no danger of serious flooding. The country is of a rolling nature and has a southerly aspect generally. No water-power could be developed. General indications point to a climate very similar to that of Edmonton. Wood for fuel is everywhere abundant. No stone-quarries nor minerals of economic value were noted. A few moose and bears were seen, but game does not appear to be plentiful.—*W. H. Waddell, D.L.S., 1913.*

RANGE 5.

(*Partial.*)—This township is easily accessible by means of a well-beaten **8.** wagon road, known as the Crowsnest trail, which traverses the entire township across the southerly part. The soil, in general, is what might be

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 5.—Continued.

termed gravelly clay, although in scattered places a rich black loam is found, but it is not sufficient in area to merit the acquisition of the land for agricultural purposes. The surface, in the central part, ranges from flat to undulating and hilly, and is mostly covered with willow, small poplar and jackpine. A few large, knotty spruce are found scattered through the township. Immediately adjacent to this so-called flat country are found high, rocky ridges of limestone. There is plenty of merchantable spruce in the north part of this township, but it is included in the Rocky Mountains Forest reserve. There is no hay nor any grass of value for grazing purposes. There is plenty of good fresh water and it is quite permanent, the Crowsnest river, averaging 1 chain in width and 3 feet in depth, and many smaller streams passing through the township. The land is not liable to be flooded. Although the Crowsnest river discharges an immense volume of water, the current being about 3 miles per hour, there is no possibility of developing water-power economically. Summer frosts are quite prevalent here. There is plenty of dry spruce in this township, particularly in the southerly part, and this could be used for fuel, or better, perhaps, for mine props. No indications of coal were noticed and there are no stone-quarries nor minerals. The game consists of a few mountain trout, also a few partridges.—W. J. Boulton, D.L.S., 1913.

23. (West half.)—This township can be reached by a fair wagon trail up the Elbow river from Calgary. The soil for the most part is a gravelly loam. The altitude of this township is too high for farming to be carried on successfully, but it is suitable for ranching. Sections 33, 28, 21, 4, 9 and 8 are rough and hilly and are covered with small poplar and spruce. Sections 31, 32, 30, 29, 19, 20, 18, 17 and 16 are mostly low, swampy lands covered partially with small poplar and willow. No timber of any commercial value is found. Small poplar and spruce up to 6 inches in diameter cover sections 4, 8 and 9. There is plenty of fresh water and the supply is permanent. Bragg creek in the southern part of the township has a width of 18 feet, a depth of 2 feet and a current of three and a half miles per hour. There are also several smaller streams in the township. Summer frosts are frequent. Poplar and pine can be procured in sections 4, 8 and 9, and poplar in sections 16, 21 and 28. Coal seams have been opened up along Bragg creek in section 17. These seams are small and the coal is a soft lignite. There are no stone-quarries and no minerals of economic value have been discovered. There has been a rush for oil claims as it is believed that oil-bearing strata underlie this portion of the country. No drilling has yet been done in this township. The game consists of coyotes, rabbits and prairie-chickens.—S. L. Evans, D.L.S., 1913.

65. The Lesser Slave Lake trail, running from Holmes Crossing to the west end of Lesser Slave lake, cuts the southwest quarter of section 6. This is a poor trail. There are numerous soft places in wet weather and part of it is very hilly. The soil is generally a black loam varying from 2 to 18 inches in depth with a clay subsoil. The soil is suitable for mixed farming. The surface is timbered mainly with poplar up to 10 inches in diameter. Willow scrub is found in patches throughout the township. Birch occurs occasionally. The muskegs, which are found in all parts of the township, are timbered with spruce and tamarack of an average diameter of 6 inches. There is no timber of any marketable value. Hay is found in very small quantities along the creeks and near the lake on the east boundary of section 28. The water is all fresh and the supply is sufficient and permanent. There are numerous small creeks in all parts. The land is not liable to be flooded. There are no water-powers. The climate is the same as that prevalent in the vicinity of Edmonton and

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 5.—*Continued.*

no frosts were experienced in June, July or the first half of August. No coal exists but dry wood for fuel is everywhere abundant. There are no stone-quarries nor minerals of economic value except a bog-iron spring in a muskeg on the east boundary of section 35. The game consists of moose, bears, rabbits, partridges and ducks. Traces of caribou were noticed but none of the animals were seen.—*J. J. Stock, D.L.S., 1913.*

66. (*South two-thirds.*)—This township is reached by a wagon road which branches from the Lesser Slave Lake trail and runs to a lake in sections 18 and 19. It is in poor condition being only a hay trail. The other trails within the township are only pack-trails. The Lesser Slave Lake trail which runs from Holmes Crossing to Lesser Slave lake is a poor summer trail. It could be put in fair shape, however, by the expenditure of very little money. Holmes Crossing, situated on the Athabaska river, is connected by wagon trail with Clyde, a station on the Athabaska branch of the Canadian Northern railway. The distance is approximately 50 miles. The soil in this township is generally a black loam of an average depth of 4 inches with gravel in places and a clay or sandy clay subsoil. It is suitable for mixed farming. About one-third of the township is swamp in which the soil is humus. The high ground is timbered mainly with small poplar of an average diameter of 3 inches. There is a considerable quantity of small jackpine and willow scrub. Sections 14, 15, 21, 22 and 23 are mostly swamp in which the timber is spruce and tamarack up to 8 inches in diameter. There is no timber of any marketable value. The only hay is in a slough from 2 to 5 chains in width surrounding a lake in sections 18 and 19. This hay is of fair quality. The water in the township is all fresh and the supply is sufficient and permanent. The only streams within the township are small creeks. The land is not liable to be flooded. There are no water-powers. The climate is similar to that of Edmonton. No summer frosts were noted. Dry wood is available for fuel in any part of the township. There is no coal nor lignite. No stone-quarries nor any indications of minerals were seen. The game consists of moose, caribou, bears, ducks, partridges and rabbits.—*J. J. Stock, D.L.S., 1913.*

72. (*North half.*)—The road from Mirror Landing to Sawridge passes along the north side of Lesser Slave river through section 34 of this township. A winter trail enters the township from the Sawridge road, passing through to Mittsue lake. There is a surveyors' trail which enters the township in section 25, and also a pack-trail from Sawridge which passes through to Mittsue lake. The surface for the greater part is level with a soil consisting of a deep black muck overlain by about 6 inches of muskeg and covered with scrub spruce and tamarack. Sections 19, 20 and 21 are hilly and covered with thick poplar up to 14 inches in diameter, scattered spruce and alder underbrush, the soil averaging about 3 inches of black loam with a stony clay subsoil. In sections 22 and 23 the land is a little higher than to the north and the soil consists of from 6 to 10 inches of black loam covered with luxuriant grasses. Good hay occurs along Mittsue creek for an average width of 10 chains, widening out into large meadows in sections 27 and 34. The shore of Mittsue lake in this township is marshy and subject to overflow in wet seasons. There is plenty of fresh water in the creeks and in Mittsue lake. The Edmonton, Dunvegan and British Columbia Railway location line passes through the northerly parts of sections 25, 26 and 27. Signs of moose and bears were seen. Mittsue lake has an abundance of fish, and in season ducks collect in great numbers. Wood for fuel is plentiful. No water-powers, stone-quarries, minerals nor coal were found.—*J. H. Johnston, D.L.S., 1913.*

73. (*North third.*)—The wagon road from Sawridge to Grouard follows the north shore of Lesser Slave lake through sections 30 and 31 of this township. The portion of this trail between Sawridge and the part of this township

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 5.—*Continued.*

subdivided is all over a hard sand beach. With the exception of parts of sections 31 and 32 this portion of the township is swamp or muskeg and will be of little use until drained. It is timbered throughout principally with a worthless growth of spruce and tamarack, but in section 31 there is a little good spruce and balsam of Gilead from 10 to 20 inches in diameter. In dry seasons good hay could be cut around the lake in section 26 and along Lesser Slake lake in section 29, but in seasons like the present one little or none could be cut owing to the flooded nature of the country. All water is fresh and of the best quality, and owing to the low, level nature of the country it is practically all liable to be flooded in wet seasons. No water-power could be developed. The climate appears to be similar to that of Edmonton, except that the rainfall is greater. No summer frosts were noted. Wood for fuel is abundant in all parts of this country. No stone-quarries nor minerals of economic value were found. Moose and bears appear to be plentiful and numerous ducks were noted in the small lake in section 26 and in Lesser Slake lake.—*W. H. Waddell, D.L.S., 1913.*

(*Partial.*)—A wagon trail crosses the south tier of sections connecting with **74.** the Sawridge-Grouard trail in the township to the west. This is a fairly good trail during dry seasons but would be impassable for heavy loads at other times. The soil consists of a rich black loam on a clay or sandy clay subsoil with some small patches of sand, gravel or rock. The better portions appear to be well suited for grain-growing. The township is timbered throughout with poplar, balsam of Gilead and a little balsam, all averaging about 6 inches in diameter. There are also a number of patches of exceptionally large willow, some of which reach a diameter of 10 inches. No hay meadows were noted. This district is well watered by numerous creeks, many of which have their origin in springs on the south slope of Martin mountain. The water is all of first-class quality, and there is no danger of floods. No water-power could be developed. The climate appears to be very similar to that of Edmonton, and no frosts were noted at the time of survey (May). Wood for fuel is very plentiful, but no coal was noted. No stone-quarries nor minerals of economic value were noted. Moose appear to be quite plentiful, and some partridges were seen.—*W. H. Waddell, D.L.S., 1913.*

RANGE 6.

(*North half.*)—The wagon road from Sawridge to Grouard passes through **72.** this township. The surface is rolling, rising rapidly to the south. This southern part is very rough and cut by numerous creeks and deep ravines. The soil consists of about 4 inches of black loam with a yellow clay subsoil and in some places a stony clay subsoil. The timber is mostly poplar with some scattered spruce and birch of no merchantable value. There is a good growth of grass throughout most of the township. Wood fuel is plentiful. No stone-quarries, coal nor other economic minerals were found. There are no available water-powers. Signs of moose and bears were seen and partridges were plentiful.—*J. H. Johnston, D.L.S., 1913.*

This township is accessible by the wagon road from Sawridge to Grouard. **73.** which passes through it. The surface is level for the most part, except in sections 6, 7 and 18 where it is rolling. The soil in sections 6, 7 and the south half of sections 4 and 5 consists of from 5 to 8 inches of black loam with a sandy clay subsoil. In these sections open patches of meadow occur, producing luxuriant grasses. The remainder of the township is covered with poplar, birch, willow and some spruce.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 6.—*Continued.*

Settlere have already located on quarter-sections in the south of the township. Plenty of good fresh water can be obtained from wells and streams. This land is excellent for mixed farming. No economic minerals, stone-quarries nor available water-powers were seen: Partridges and prairie-chickens were the only game seen.—*J. H. Johnston, D.L.S., 1913.*

(*Partial.*)—This township can be reached from Sawridge by the north shore trail from Sawridge to Grouard which is very rough in places but passable at all times of the year. The soil is a good clay loam from 3 to 12 inches deep on a clay or sandy clay subsoil and appears suitable for general farming. The township is timbered throughout with a heavy growth of poplar, balm of Gilead, spruce and birch and a very heavy undergrowth of willow, alder, hazel and cranberry bushes. There are a few patches of spruce, large enough to be of commercial value, in sections 1, 12 and 23. A saw-mill is now in operation in section 1, and about 500,000 feet b.m. of logs have been cut in section 12 and left piled on the beach of Lesser Slave lake. No hay meadows were noted. The water is all fresh and of splendid quality. There is no danger of floods, the township lying well above the level of Lesser Slave lake which affords splendid drainage. No water-power could be developed. General indications point to a climate suitable for farming purposes and no summer frosts were experienced. Wood for fuel may be had in abundance. No coal, stone-quarries nor minerals of economic value were noted. Moose and bears appear to be plentiful, while ducks are reported to frequent Lesser Slave lake in large numbers in the autumn months.—*W. H. Waddell, D.L.S., 1913.*

(*Partial.*)—The trail from Sawridge to Grouard follows the north shore of Lesser Slave lake through this township. It is very rough in places but is passable with light loads at all seasons of the year. There is a small percentage of good loam soil on a clay subsoil which is suited for farming purposes, but the balance is of little use, being gravel or a heavy clay with numerous boulders. This township is practically all timbered with a heavy growth of poplar, birch and spruce up to 12 inches in diameter with a heavy growth of underbrush. The only prairie is a small patch along Martin creek in section 19. Good hay could be cut here but no other hay areas were noted. The township is well watered by numerous streams which have their source in Martin mountain. These are all quite small excepting Martin creek which averages about 50 feet in width and 3 feet in depth. The country is rolling and no land is liable to be flooded. All water is fresh and of splendid quality. No water-power could be developed. No summer frosts were noted and the climate appears suited to mixed farming. Wood for fuel is abundant. No coal, stone-quarries nor minerals of economic value were noted. A few moose and black bears were seen, and ducks are fairly plentiful on Lesser Slave lake.—*W. H. Waddell, D.L.S., 1913.*

(*West third.*)—The north shore trail from Sawridge to Grouard passes through section 19, township 75, range 6, and from here a branch trail was opened up to the south boundary of section 5 of this township. This trail is passable at all seasons, but is never good owing to the long stretches of rocks along the shore of Lesser Slave lake. The portion of the township subdivided is nearly all muskeg or sand ridges and will be of no value for farming purposes until the muskegs are drained. It is timbered throughout with a scrubby growth of spruce, tamarack, jackpine, poplar and birch of no commercial value. Much of the timber is second growth on old brûlé. The water is all fresh and of good quality. As the country is so flat it is liable to be flooded during wet seasons and is probably

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 6.—*Continued.*

very wet even in dry ones. No water-power could be developed. General indications point to a climate well-suited for farming purposes, and no summer frosts were experienced. No coal, stone-quarries nor minerals of economic value were noted. Moose and bears appear to be very plentiful and were the only game seen.—*W. H. Waddell, D.L.S., 1913.*

108. The road from Fort Vermilion to Red river passes through the southerly portion of this township. It is a good winter trail. The Peace river flows through the central portion of the township in an easterly direction, and the steamer landings, above and below the Vermilion rapids and chutes, are located on the south side of the river within the township boundaries. A wagon trail connects both landings with the Red river. The Peace river, owing to the chutes, is very wide here, the distance being about a mile and a quarter. The falls and rapids are about a mile and a half long. The current in the rapids is very strong, at least 6 miles per hour, but below the chutes the flow is only about 2 miles per hour. The total fall is roughly 25 feet and it should be possible to develop at least 200,000 horse-power at low water. On both sides of the river there is a considerable amount of swampy land which could be drained, but the expense of doing so would be high. The limestone formation found at the chutes runs north and was found quite close to the surface. The township is generally covered with poplar, spruce and willow. On the north side of the river a creek had flooded a considerable portion of the country, and the water was flowing among the trees. The soil is usually about 3 inches of black loam overlying a sandy clay loam; sand is also found in places. The soil is generally third class and is not very productive. The limestone, which is so prominent along the Peace river, would furnish an abundant supply of building stone; it seems to weather very rapidly, however. No minerals of economic value were found. Practically no hay could be cut. Fresh water is plentiful in the swamps nearly everywhere in the township. Wood is plentiful but no coal was seen. Foxes, coyotes, wolves, moose, bears, weasels, minks, ducks, prairie-chickens and grouse were found.—*J. S. Galletly, D.L.S., 1912.*

RANGE 7.

(*Section 14.*)—This township is reached by following the trail from Okotoks **19.** up the south branch of Sheep river as far as Lineham's upper lumber camp, and thence the last 7 miles by a pack-trail. These trails are in fair condition. The surface is mountainous, of limestone formation, and suitable only for mining purposes. It is covered mostly with spruce and jackpine. The hills along Sheep river are over 2,000 feet above the bed of the stream. The timber in the township is difficult to lumber and no valuable areas were seen. Hay is very scarce. Pack-ponies can graze in the valley of Sheep river during the summer months. The water is fresh and the supply is permanent. Sheep river, which runs through this township, has an average width of 12 feet, a depth of 1 foot and a velocity of 3 or 4 miles per hour. There is no land liable to be flooded. No falls nor rapids were seen. This township has an elevation of over 5,000 feet above sea-level. Summer frosts are frequent. Onions and lettuce were grown successfully in the valley of Sheep river. There is plenty of coal and wood in the township for fuel purposes. Some of the best coal seams yet discovered in Canada are said to be in this township. It is a very high-class steam coal. No stone-quarries nor minerals of economic value, other than coal, have been found in the township. Deer, wild sheep, partridges and rabbits are plentiful in the district.—*S. L. Evans, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 7.—Continued.

(North half.)—This township is accessible by the wagon road from Sawridge to Grouard. In winter the sleigh road passes along the lake, connecting with a stopping place for freighters, known as "Nine Mile Point." The surface of the township is rolling, and is covered with poplar, birch and spruce. The soil consists of about 4 inches of black loam with a sandy clay subsoil. An abundance of hay is produced along the lake in section 26 in a wet season; but this hay land is subject to flooding. The Edmonton, Dunvegan and British Columbia railway is located along Lesser Slave lake through this township. No available water-powers nor stone-quarries were found. Float-lignite was seen in a creek bed in section 22. An abundance of whitefish and lake trout can be obtained from Lesser Slave lake. Signs of moose and bears were seen.—*J. H. Johnston, D.L.S., 1913.*

(Fractional.)—Sawridge formed the base of supplies for this survey. The trail from Sawridge to Grouard passes through this township along the north shore of Lesser Slave lake and is passable for light loads at all seasons of the year. The soil is a vegetable mould about 3 inches in depth, the subsoil being a sandy clay, and is adapted to agricultural pursuits. This fractional township is timbered throughout with poplar, spruce and scattered jackpine. Some spruce in sections 33, 34 and 35 is of commercial value. There is no hay. The water is fresh and abundant. There are no water-powers available. The climate is similar to that of Edmonton and appears suitable for all farming operations. Wood for fuel is very plentiful. No stone-quarries nor minerals of economic value were observed. Game appeared to be very scarce. A few bears were seen along Lesser Slave lake.—*A. W. Ponton, D.L.S., 1913.*

76. Sawridge, a town at the east end of Lesser Slave lake, can now be easily reached from Edmonton by rail and by steamers on the Athabaska river, but it is advisable to forward supplies during the winter months by rail to Athabaska and from there by sleighs to Sawridge, which formed the base of the survey. A sailboat was employed to take forward supplies as required, steamers being unable to land on the north shore of Lesser Slave lake owing to shallow water. A wagon trail was opened out from the shore of the lake, leading through township 75, range 7, into this township. The top-soil is a vegetable mould, averaging 3 inches in depth. The subsoil is a sandy clay, but when laid bare by fire, it produces a luxuriant growth of grasses and would no doubt produce wheat and other crops. The township is entirely bush country, and while poplar of fair size generally prevails, much valuable spruce is scattered throughout and is available for ties for projected railroads in this district. Hay is lacking with the exception of small areas bordering the creeks. No permanent watercourses were found, and such as are shown in the field notes represent watercourses which carry off flood-water only. The water is fresh and no alkali was noticed. No water-power is available. The climate is similar to that of Edmonton and the proximity to such a large body of water as Lesser Slave lake would promise freedom from summer frosts. Wood for fuel is very plentiful, but no evidence of coal was observed. No stone-quarries nor minerals were found. Moose and ground game of all varieties seemed to be fairly plentiful.—*A. W. Ponton, D.L.S., 1913.*

RANGE 8.

(Sections 31, 32 and 33.)—The southern portion of section 31 is very rough and is cut by a deep ravine about half a mile wide. The eastern portion of section 33 is similarly cut by ravines. The remainder of these sections

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 8.—Continued.

is rolling and covered with poplar, birch and spruce. The soil consists of about 4 inches of black loam with a stony clay subsoil. Assineau river flows through section 33. The soil in the flats is a rich loam which produces good grass. Water-power could possibly be developed in Assineau river. No stone-quarries nor economic minerals were found but float-lignite was seen in the river. The game consists of moose, bears and partridges.—*J. H. Johnston, D.L.S., 1913.*

(Partial.)—The Sawridge-Grouard wagon road passes through the north-west corner of this township, and a good surveyors' trail branches south from this road along the Assineau river. The surface is gently rolling, descending to the north. To the east of Assineau river, sections 9, 16, 21 and 28 lie on the western slope of the hills. Sections 27, 26 and 25 slope towards Lesser Slave lake. These sections are cut by numerous ravines. The soil consists of about 4 inches of black loam over a stony subsoil. In the remainder of the township subdivided, the soil consists of from 4 to 8 inches of black loam with a sandy subsoil. In the valley of the Assineau river, which is about 60 feet below the table-land, the black loam reaches a depth of 14 inches. There is an abundance of grass, and open patches, up to 20 acres in area, occur along the river. The timber is mostly poplar, birch and spruce. Some fairly good spruce occurs in the northern portions of sections 31 and 32. In the north of sections 33 and 34 and in part of section 35, the land is low and swampy. The part of the township subdivided, when cleared, will make excellent agricultural land suitable for mixed farming. On account of the great percentage of birch, the clearing should not be a heavy task as birch decays very rapidly. Assineau river flows through sections 4, 9, 8, 17, 20, 29 and 32 and averages about 50 feet in width, 18 inches in depth and has a current of two and a half miles per hour. Its banks are about 12 feet high. The water-level is subject to quick changes, a rise of 8 feet in two days having been noted. The Edmonton, Dunvegan and British Columbia railway passes through the northern part of the township. Water-power might possibly be developed in Assineau river. There are no stone-quarries nor economic minerals, but float-lignite was found in the river. Moose, bears and partridges were seen and fish (suckers) were plentiful in the Assineau river. The climate should be very suitable for the growing of grain, as the warm breezes of the lake would prevent early frosts.—*J. H. Johnston, D.L.S., 1913.*

(Fractional.)—Sawridge formed the base of supplies for this survey. The trail from Sawridge to Grouard along the north shore of Lesser Slave lake passes through this township and is passable for light loads at all seasons of the year. The soil is generally a vegetable mould about 3 inches in depth with a sandy clay subsoil and appears to be very suitable for farming. Along the lake-shore the soil is quite sandy. The township is timbered throughout with poplar, spruce and jackpine, the spruce being very scattered and of little use for lumbering operations. There is no hay to be had in the township. The water is fresh. There are no water-powers nor can any be developed. The climate is similar to that of Edmonton and appears to be suitable for agricultural pursuits. Wood for fuel is abundant. No stone-quarries nor minerals of economic value were observed. Game appeared to be scarce with the exception of fish, good whitefish being obtained in Lesser Slave lake.—*A. W. Ponton, D.L.S., 1913.*

Sawridge formed the base of this survey, a sailboat being employed to carry supplies to the different camps as required, as steamboats were unable to land owing to the shallow water along the north shore of Lesser Slave lake. The

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 8.—*Continued.*

trail from township 76, range 7, was continued across this range into township 76, range 9, but in doing so it was found necessary to make a detour to the north into township 77, range 8, to avoid a large muskeg and tamarack swamp on the west side of this range. The soil for the most part is a vegetable mould of an average depth of about 3 inches with a sandy clay subsoil, and appears to be suitable for agricultural pursuits. This township is entirely bush, being timbered with poplar, spruce, jackpine and tamarack, the spruce and jackpine being very scattered. The northwestern portion of the township is muskeg and swampy country of little value at present, though it would appear that this could be easily drained. Hay is very scarce. The water is fresh and abundant. No water-powers are available. The climate is similar to that of Edmonton and appears to be suitable for all farming operations. Wood for fuel is found in abundance. No stone-quarries nor minerals of economic value were observed. A few moose and other ground game were noticed, but they are not plentiful.—*A. W. Ponton, D.L.S., 1913.*

RANGE 9.

(*Sections 31, 32 and 33.*)—The Swan Hills trail follows the east bank of Swan river through sections 32 and 33. Section 31 is rolling and covered with poplar, birch and some spruce. The eastern portion is covered with a high spruce muskeg extending the whole length of the section. The soil consists of about 4 inches of black loam with a sandy clay subsoil. The western portion of section 32 is in the flats of Swan river. The surface is level and the soil consists of 8 inches of black loam over a sandy clay subsoil. The timber consists of poplar, birch and spruce with some cottonwood up to 48 inches in diameter. On the east side of the river the country has been burnt over, leaving scattered *brulé*, and for half a mile east to the foot of the hill, luxuriant grasses and pea-vine grow. These meadows extend into the northeast quarter of section 29. The eastern portion of section 33 is covered with *brulé* and windfall. The soil is of a sandy nature. Swan river, in this township, is in some places 300 feet wide with wide gravel bars and numerous rapids. Water-power could be developed here although the river is subject to rapid fluctuations in water-level. After a heavy rain, in two days, there was a difference in water-level of 14 feet, the river bringing down large quantities of drift. The current at low-water here is 3 miles per hour, but at high-water it is 5 miles per hour. Fish (suckers) were seen in Swan river.—*J. H. Johnston, D.L.S., 1913.*

(*Partial.*)—The Swan River Settlement trail, or what is known as the Swan Hills trail, from Edmonton to Grouard passes through this township. This is a first-class trail through the settlement, but on entering the Swan hills the grade becomes steep in places. Several light loads were brought through from Edmonton during the summer by settlers. Sections 36, 35 and 34 lie on the northern slope of the Swan hills. The southern portions are very rough and cut by deep ravines. Sections 22 and 27 are similarly on the western slope. The timber consists of thick poplar, birch and some spruce. The soil consists of about 4 inches of black loam overlying a sandy clay subsoil. Good grass is found on these slopes. The remainder of the township subdivided is gently rolling and covered with poplar, birch and spruce of fair size and quality. In sections 9, 16, 15 and 21 there are places where the black loam reaches a depth of 18 inches with a sandy clay subsoil; its average depth is 7 inches. In the northwest portion of section 28 and the southwest part of section 33 the land is low and swampy. Swan creek which flows through sections 4, 9, 8 and 5 into Swan river has an average width of 40 feet, a depth

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RANGE 9.—*Continued.*

of 10 inches and a current of about 2 miles per hour. In the western part of section 4 and the southern portion of section 9 there are open meadows producing an abundance of the finest grasses, including pea-vine and fireweed. The land in this township, when cleared, will be very productive and suitable for mixed farming. There are no available water-powers nor stone-quarries. In Swan river, which flows through the western portion of the township, float-lignite was found in several places. This undoubtedly has come from the hills farther up the stream where the finding of coal has been reported. No economic minerals were found. Wood for fuel is plentiful. Partridges and prairie-chickens were the only game noticed. Vegetation showed no signs of any summer frost. This is probably accounted for by the warm breezes off Lesser Slave lake. The proximity of this lake taken in conjunction with the high altitude of Swan Hills, produces an abundant rainfall.—*J. H. Johnston, D.L.S., 1913.*

73. The Sawridge-Grouard road passes through the northeast corner of this township. The surface is rolling and covered with poplar, birch and spruce, except in sections 16, 17 and the west portions of 6 and 7 where the finest of hay meadows occur. Vetches and pea-vine grow in abundance. Open patches of good grass also occur along the creek in sections 9 and 10. Sections 19, 20, 21, 28, 29, 32, 33 and 34 are low and inclined to be swampy. The soil consists of about 4 inches of black loam with a clay subsoil. Fresh water is plentiful. There are no available water-powers nor stone-quarries. No coal nor economic minerals were found. Signs of moose were seen. The Edmonton, Dunvegan and British Columbia railway enters this township in section 36 and leaves in section 19.—*J. H. Johnston, D.L.S., 1913.*

(Fractional.)—The Sawridge-Grouard trail passes through the southern part of this township, crossing Swan river at a ford. At high-water this ford is dangerous, and a raft must be used. The surface is level and covered mostly with poplar, birch and spruce. Spruce up to 24 inches in diameter occurs in patches along the river. In the southeast quarter of section 9 the land is marshy, also in the northeast quarter of section 4 and the south of section 3. This portion produces very rank grass (red top), which can be cut, and large quantities of hay may be obtained in an ordinary season. The soil consists of very rich black loam from 4 to 8 inches deep on a sandy clay subsoil. No water-powers are available. Swan river, through this township, is deep with a very slow current averaging not more than 2 miles per hour. No coal, economic minerals nor stone-quarries were found. Game was scarce, only a few partridges and ducks having been seen.—*J. H. Johnston, D.L.S., 1913.*

(Fractional.)—Sawridge formed the base of supplies and a sail-boat was **75.** employed to take forward supplies as required, steamers being unable to land on the north shore of Lesser Slave lake owing to shallow water. The trail from Sawridge to Grouard along the north shore of Lesser Slave lake passes through this township and is passable at all seasons of the year for light loads. A wagon trail was opened cut through this township from township 76, range 9, to Lesser Slave lake. The soil is a vegetable mould about 3 inches in depth, the subsoil being a sandy clay with rocks along the shore of Lesser Slave lake. This township is entirely bush country. Poplar of a fair size prevails and some valuable spruce is scattered throughout. Hay is lacking with the exception of a small area along a creek in sections 33 and 34. A branch of Narrows creek passes through this township, being 4 feet deep and 15 feet wide. No alkali was observed. No water-

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 9.—*Continued.*

power is available and none can be developed. The climate is similar to that of Edmonton, and the proximity to such a large body of water as Lesser Slave lake would promise freedom from summer frosts. No stone-quarries nor minerals of economic value were observed. Game was scarce; a few bears were seen.—A. W. Ponton, *D.L.S.*, 1913.

76. Sawridge formed the base of survey, and supplies were forwarded by sail-boat as required. A wagon trail was opened out from township 76, range 8, into this township, following an old pack-trail. This trail is passable at all seasons of the year for light loads. The soil is a vegetable mould about 3 inches in depth with a sandy clay subsoil. This subsoil, when laid bare by fire, produces a luxuriant growth of grasses and no doubt would produce wheat and other farm products. The township is entirely bush country, the timber consisting for the most part of fair-sized poplar with scattered spruce and jackpine. Considerable quantities of good hay could be cut in dry years along the creek in sections 10, 4 and 3. The water is fresh and abundant everywhere. The east branch of Narrows creek flows through this township and under ordinary conditions would be about 2 feet deep and 10 feet wide, but owing to heavy rains during the progress of the survey in June, July and August, it had overflowed its banks and flooded the surrounding country to a depth of 2 feet. There are no water-powers nor can any be developed. The climate is similar to that of Edmonton in every way. Fuel is very plentiful. No stone-quarries nor minerals of economic value were observed. Game is scarce, though some signs of moose and bears were observed and a few partridges were seen.—A. W. Ponton, *D.L.S.*, 1913.

RANGE 10.

60. This township can be reached by way of the Grand Trunk Pacific railway to Wabamun, thence by wagon road by way of Lake St. Ann settlement to White Court, and thence by wagon road or trail a distance of 8 miles in an easterly direction. These roads are quite passable during dry weather and winter but difficult during heavy rains. It can also be reached by way of the Grand Trunk Pacific railway and the McLeod or Athabaska rivers, the latter river passing through the southerly end of the township. The soil is mostly sandy clay with peat in the swamps and would be suitable for mixed farming and grazing. It has been heavily timbered originally but severe fires have run over it, leaving *brulé* and windfall. In many places the topsoil has been burned off, leaving a more or less stony clay subsoil exposed. The surface is broken and hilly adjoining the north bank of the Athabaska river and through the easterly and northerly sections, and more or less rolling in the remainder of the township. A belt of green timber follows along the north side of the river and consists of poplar, cottonwood and spruce up to 18 inches in diameter in places, but in no marketable quantity. Green poplar, spruce and tamarack also skirt the northerly and easterly portions of the township. Throughout the central portion there is much *brulé* and windfall with standing small, dry timber and a growth of small jackpine, willow and poplar with scattered tamarack and spruce swamps. The northeast quarter of section 30 is nearly all meadow land with an apparently good growth of hay. A low valley enters this meadow from the west and is drained by a fair-sized creek which leaves it on the easterly side. It appears to have been occupied recently by beavers. There is a fair supply of fresh water of good quality. The Athabaska river flows through sections 6 and 5, leaving the township in the latter section. It, however, re-enters the township and flows through sections 3, 2 and 1. It is from 2 to 10 or 15 feet

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 10.—Continued.

deep, from 10 to 15 chains wide and has a current of from 5 to 10 miles per hour. A fair-sized creek flows from section 30 through the township in a southeasterly direction and enters the Athabaska river in section 1. Another enters the township in section 19 and also flows southeasterly, entering the river in section 2. These streams have several small tributaries. They are from 3 to 6 feet wide, from 6 to 12 inches deep, and have slow currents. Small lakes are located in section 32, sections 34 and 35, sections 17 and 18 and also one in section 16. They are probably from 5 to 15 feet deep. The lands adjoining the lakes, creeks and river are more or less elevated and not liable to be flooded. The township is all on the north side of the river except portions of sections 6, 5, 3, 2 and 1, and lies at an elevation of from 200 to 300 feet above the river. The southerly halves of sections 11 and 12 are in the river-flat. The climate is good with no extreme heat or climatic disturbances. Considerable rain falls during the months of June, July and August. Summer frosts occur which are sufficient at times to form ice on still water. Dry wood for fuel may be obtained in all parts of the township. No stone-quarries, coal seams, water-powers nor minerals were seen. Signs of bears, moose and deer were seen, and beaver signs were numerous along the river. This township is not likely to be settled very quickly as it is more or less isolated and cut off by the river and the high cut banks on the north side.—*J. Gibbon, D.L.S., 1913.*

(Partial.)—Sections 31 and 36, inclusive, are very rough being cut by numerous ravines and creeks. The soil consists of about 3 inches of black loam over a glacial deposit subsoil. The timber is very dense poplar with scattered spruce and underbrush, except in section 31, where some good merchantable white spruce occurs. There are no water-powers. No stone-quarries, coal nor economic minerals were found. Signs of moose were seen and partridges were very plentiful.—*J. H. Johnston, D.L.S., 1913.*

72. This township is reached by the Swan River Settlement trail which passes through its northeast corner. The surface is gently rolling to a little south of the south chord and is timbered with dense poplar, alder and some scattered spruce. The soil consists of from 3 to 5 inches of black loam overlying a sandy clay subsoil. Tamarack and spruce swamps occur in the east of section 33, the west of section 34, and in the north of section 31. A high spruce muskeg occurs in sections 16 and 21. Good grass is found everywhere. This land will be well adapted to mixed farming when the timber is taken off. The southern part of the township rises rapidly and its surface is cut by numerous deep ravines and creeks. It is thickly timbered with poplar, some birch and scattered spruce, but not enough to be of commercial value. In the southwest corner of section 6 some good merchantable spruce occurs, although it is not extensive. The soil consists of from 2 to 4 inches of black loam covering glacial deposit. In the southern part of section 15 and the northern part of section 9, patches of open land occur along a creek which furnishes plenty of fresh water. Good water can be obtained everywhere in the township. Wood for fuel is plentiful, but no coal, lignite, water-powers, stone-quarries nor economic minerals were found. Signs of moose were noticed, and prairie-chickens and partridges were seen. Although it was a very wet season, the grain at Swan River settlement was not damaged by frost and a good yield was obtained.—*J. H. Johnston, D.L.S., 1913.*

76. Sawridge formed the base of supplies for the survey of this township. A trail was opened up from township 75, range 9, into this township as far as section 15. This trail would ordinarily be fairly good, but it was very wet during the survey operations this season. The soil is a vegetable mould of an aver-

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 10.—*Continued.*

age depth of about 3 inches with a clay subsoil, and it appears to be suitable for farming purposes. The township is timbered throughout with poplar, spruce, birch and jackpine. In sections 5, 6, 3, 2, 11 and 12 there is some spruce of commercial value, but not in sufficient quantity for lumbering purposes. There is no hay. Water is fresh and abundant. There are no water-powers. The climate is similar to that of Edmonton. Fuel is plentiful and consists of poplar, spruce and jackpine. No stone-quarries nor minerals of economic value were observed. Game appears to be scarce, only a few partridges being noted.—*A. W. Ponton, D.L.S., 1913.*

RANGE 11.

This township can be reached by way of the Grand Trunk Pacific railway **60.** to Wabamun, thence by wagon road to White Court, which is situated at the junction of the McLeod and Athabaska rivers and adjoins the south-west corner of this township. During the spring and rainy season this road is unfit for heavy loads, but it is fairly good in dry weather. This locality can also be reached by way of the Grand Trunk Pacific railway and the McLeod river or the Athabaska river, the latter passing through this township. The soil is of a light sandy nature and would be suitable for light farming or grazing. The surface is high and rolling, having an elevation of 200 to 300 feet above the river, and was originally heavily timbered with spruce, cottonwood, tamarack and poplar. It is now more or less broken with light poplar, willow and scrub, with standing dry timber and heavy windfall in places, and also some belts of green spruce and poplar up to 24 inches in diameter in sections 10, 15, 11, 14, 13, 12, 18, 19, 20, 29, 30, 31 and 32. Very little hay was found. The water is of good quality and consists of small running creeks draining to the Athabaska river which traverses the township from west to east through the southerly tier of sections. Along the south side of the river there is a flat about half a mile wide and about 10 or 15 feet above low water. This river comes from the mountains and is swiftly flowing, the current being from 5 to 10 miles per hour. It varies from 10 to 15 chains in width and has a probable depth of from 2 to 15 feet. The water is of excellent quality. No land is liable to be flooded. No water-power could be developed within the township. The general climate is good and favourable to the growth of grasses and foliage. There is a considerable rainfall during the months of June, July and August, and occasional frosts, severe enough to form ice on still water, are liable to occur. The summer is generally warm with no excessive heat, and winter frosts set in about November 1. Dry wood is the most available fuel and can be procured throughout the township. Outcroppings of slacked and broken-down coal formations were noticed along the north bank of the Athabaska river in the cut banks, also sandstone and clay formations. No other minerals of any value were noticed. Signs of beaver are numerous along the river banks and tracks of the larger animals, such as moose, deer and bears, were frequently seen. Fish are rather scarce, as is also small game, although trappers' trails are numerous. At present the township is backward for settlement on account of the difficulty of access due to the high cut banks on the north side of the river.—*J. Gibbon, D.L.S., 1913.*

(*East outline.*)—Through sections 36 and 25 the country is rolling with an occasional high muskeg. **72.** The timber consists of poplar with some scattered spruce. In sections 24, 13, 12 and 1, the country rises rapidly to the south. The soil is a glacial deposit on the hills, covered with a thin layer of humus or black loam. In section 1 some good merchantable spruce occurs, but it is not extensive.—*J. H. Johnston, D.L.S., 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 11.—*Continued.*

From Fort Vermilion there are two wagon trails to this township; one ends **108.** at the Peace river in section 33, and the other runs in an easterly direction through the middle of the township. The latter is really the winter trail to Red river and is not a very good wagon road for part of the way. The first-mentioned is the better trail. Sections 34, 35, 36, 25 and 26 of this township contain some of the finest soil found in the Fort Vermilion district. All the pits dug in these sections show black loam to a depth of 18 inches. South of the Peace river there are many swamps and sand ridges, rendering this part of the township useless for any agricultural pursuit except ranching. Poplar and spruce up to 18 inches in diameter and willow are found in nearly every section, while an occasional tamarack and jackpine may also be seen. Hay could be cut on some of the swamps. The Peace river flows through the northeasterly corner of the township and is usually about a mile wide. Many islands and sand bars occur in it. Outside of this supply, good water is scarce but could probably be obtained by digging to a reasonable depth, perhaps 30 feet. Wood is everywhere plentiful for fuel but no coal was seen. No water-power could be developed. No stone was found except in the bed of the Peace river. No minerals of economic value were noticed. On the north side of the river the banks are very low but on the south side they reach a height of 50 feet. Minks, weasels, rabbits, foxes, wolves, coyotes, moose, bears, ducks, geese, prairie-chickens and grouse are found.—*J. S. Galletly, D.L.S., 1912.*

(*East half.*)—A good pack-trail from North Vermilion, following the north **109.** bank of the Peace river, enters this township in section 18 and continues southwesterly to section 3 where it joins a good wagon trail which goes almost due east through sections 3, 2 and 1. In winter there is a good sleigh trail on the south side of the river from Fort Vermilion to a ranch in section 3 of this township. The Peace river itself, which flows across the southwesterly corner of the township, is a fairly convenient route to this township. The surface of the township towards the south is fairly open, but about half a mile from the base line the bush becomes thicker. The north two-thirds of the township contains no open patches except hay marshes and about two sections in the northwest corner which have been swept by fire. The timber is mostly poplar up to 12 inches in diameter, some spruce from 6 to 24 inches, and willow. The soil is generally second class, being about 4 inches of black loam overlying a clay loam subsoil. It should grow all the crops of the district. Numerous hay marshes occur throughout the township but they are nearly all small. Because of these and the plentiful supply of good water in Beaver creek and the Peace river, the township is well adapted to ranching. The banks of the Peace river and of Beaver creek are seldom 50 feet high and are usually much less. Beaver creek is about 30 feet wide, from 2 to 4 feet deep and flows at about 4 miles per hour; it has been dammed in many places by beavers. Summer frosts are likely to occur. No water-power could be developed. Wood for fuel is plentiful everywhere, but no coal of any kind was seen. No minerals of economic value were found. Stone in the form of boulders can be obtained in the bed of the river. Water of good quality can be procured in Peace river and Beaver creek, or by digging near any of the hay marshes; the latter might possibly be alkaline. There is a slight tinge of alkali all over the township but not enough to seriously interfere with the pursuits of settlers. Beavers, minks, weasels, foxes, coyotes, wolves, rabbits, moose and bears are found, also ducks, geese, ptarmigans, prairie-chickens and ruffed grouse.—*J. S. Galletly, D.L.S., 1912.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 12.

(*Partial.*)—The winter trail to Red river passes through sections 28, 27, 26 **108.** and 25 of this township. This is a good wagon trail as far as Wolf lake which lies to the east of section 24. Another wagon road, recently cut, runs through Fort Vermilion settlement, part of which occupies a portion of the west of this township, and then crosses sections 5 where it leaves the township. A branch of the latter trail, cut by ourselves, runs through sections 4 and 3. The best part of the township is taken up by Fort Vermilion settlement. The remainder is generally covered with poplar up to 8 inches in diameter, spruce up to 15 inches, and willow. A few tamarack are scattered through the spruce. There are many hay marshes and the surface is generally of muskeg which would not bear the weight of a horse. Fire has swept the surface, leaving much deadfall. The soil consists of about 3 or 4 inches of black loam overlying a sandy clay loam. It is second class but should grow all the crops of the district. Summer frosts are likely to occur. Except in the Peace river, which occupies the northwest corner of the township, water is scarce and we had difficulty in securing enough for camp use. No minerals of economic value were seen. No coal was found but wood is plentiful for fuel. No water-powers could be developed. Other than the boulders which occur in the bed of the Peace river, no stone was noticed. Hay is scarce. Moose, bears, minks, weasels, rabbits, lynxes, geese, ducks and prairie-chickens were seen. The township is best adapted to mixed farming.—*J. S. Galletly, D.L.S., 1912.*

(*South third.*)—From North Vermilion there is a pack-trail which crosses **109.** the Boyer and Caribou rivers and leaves this township to continue to a ranch in township 109, range 11. These rivers are not always passable for horses during the spring when they are in flood. The Peace river would also form a ready means of entering this township as it crosses the base line in section 3 and leaves the township in section 13. Some large islands break the river into several channels, but usually it is about three-quarters of a mile wide and flows at about 3 miles per hour. It reaches a depth of 45 feet in the main channel. Boyer river is about two and a half chains wide and empties into the Peace river in section 9. It flows at about 3 miles per hour and varies from a few inches to several feet in depth. Caribou river, about a chain and a half wide, is very swift but usually shallow. There is an almost continuous cut bank along this river which renders it difficult for horses to cross. It flows southeasterly through the township and enters the Peace river in section 13. Generally speaking, the soil is about 4 inches of black loam overlying a clay loam subsoil. It is second class but should grow all the crops of the district. North of Caribou river the country has been swept by fire and much of it is open. The remainder of the township is covered with a thick growth of poplar up to 12 inches in diameter, spruce up to 18 inches and willow. South of the Peace river there is a considerable amount of deadfall. The water in the rivers is good but none was found beyond this source. Summer frosts are likely to occur. No water-power could be developed. A little hay could be cut along the base line but this is already taken up by residents of Fort Vermilion. No minerals of economic value were seen. No stone, except in the river beds, was noticed. Wood is plentiful for fuel but no coal was found. Bears, moose, minks, beavers, weasels, rabbits, ducks, geese and prairie-chickens are found. The township is best suited for mixed farming.—*J. S. Galletly, D.L.S., 1912.*

RANGE 13.

60. This township can be reached by way of the Grand Trunk Pacific railway from Edmonton to Wabamun; thence by stage and wagon route to White Court which is situated at the junction of the McLeod and Athabaska rivers,

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 13.—*Continued.*

and thence by trail up the south side of the Athabaska river to the southeasterly portion of the township. It can also be reached from Peers, a station on the Grand Trunk Pacific railway, and thence by boat or scow down the McLeod river. Another route is by rail to Pedley or Hinton, also stations on the Grand Trunk Pacific railway, and thence by boat or scow down the Athabaska river. In the near future it can be reached by the Canadian Northern railway, as their projected line from Edmonton to the Peace River country passes through the southerly part of the township; at present the right of way is cleared and the grading finished. The soil is mostly a covering of sandy clay and clay loam from 4 to 6 inches in depth and a sandy clay subsoil with small stones in places and occasional areas of swamp, having a depth of from 18 to 24 inches of peat and muck. The soil and conditions would seem most suitable for light farming and grazing. The surface is mostly high and rolling and was originally covered with a heavy growth of large spruce, cottonwood and jackpine which has been cleared off, more or less, by large fires, leaving scattered standing dry timber and wind-fall with an indifferent second growth of small timber and scrub and a growth of grass where exposure and soil permit. On the north side of the Athabaska river there is a series of rough, broken hillsides which rise from 200 to 300 feet above and stretch about half a mile back from the river. North of this there is a rolling and broken country of timbered ridges, swamps and benches. A flat, from one-half to one mile in width and elevated above the river from 10 to 15 feet, parallels it on the south side. This flat consists mostly of swamp land with clumps of large spruce adjoining the river and on the islands, the timber where the drainage is poor, being small and stunted. A plateau, which rises from this flat to a height of about 200 feet, has more green and better timber than the northerly portion of the township. The northerly halves of sections 7, 8, 9, 10, 11 and 12, the southerly halves of sections 15, 14 and 12, and the easterly half of section 1, which border on the river and contain some islands, have more or less marketable timber, consisting of spruce and cottonwood from 8 to 30 inches in diameter; a portion of this area is included in timber berth No. 1238. There is little or no hay. The water supply is sufficient and of good quality. The Athabaska river, from 10 to 15 chains wide and from 3 to 15 feet deep with a current of from 5 to 10 miles per hour, crosses this township from west to east along the south chord. The adjoining plateau and benches have a number of small springs and tributary creeks from 2 to 4 feet wide and from 1 to 2 feet deep. These lands are not liable to be flooded except the low-lying portions along the river in extreme high water. There are no water-powers except what might be developed from the Athabaska river which is a swiftly flowing stream with numerous small rapids but without any favourable or practicable locations for dams. There is a considerable rainfall during the months of June, July and August. Extremes of heat are rare and as a whole the summer is cool, pleasant and favourable to a good growth. Summer frosts occur occasionally. The first hard frost occurred about November 1st. It was sufficient to affect the ponds and lakes, and particles of ice running in the river were evidence of its severity. Wood for fuel is found throughout the township. Coal outcroppings apparently of good quality were noticed along the north bank of the river at the water line, and also some sandstone above the coal seams in the vicinity of sections 15 and 14. No other minerals were found. Numerous signs of beavers were seen along the river but fish seemed to be scarce. Fresh moose trails were seen at times, but very little game either large or small was in evidence, although the vicinity and surrounding country is frequented by numerous trappers in the trapping season. At present, taking it as a whole, this township would not be considered very favourable for settlement as it is more or less cut off by the high river banks on the north side.—J. Gibbon, D.L.S., 1913.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 13.—Continued.

This is the best settled township in the district. The Peace river runs about two miles south of the base line and varies from 30 chains to a mile and a half in width. The current varies from 3 to 5 miles per hour, and the depth in places is 40 feet. Several large islands occur in it. The settlement of North Vermilion lies almost wholly in this township, being in sections 36, 35, 34, 27, 26 and 25. Fort Vermilion settlement on the south side of the river occupies part of sections 23, 24, 14, 11, 2 and 1, and all of sections 12 and 13. A good wagon trail from North Vermilion to Prairie Point follows the north side of the river. The trail to Hay river passes through sections 35 and 34. Both of these trails are in good condition. South of the Peace river the country is more open and almost any section can be reached with a wagon. The soil is usually second class, being a sandy loam. It is slightly alkaline, but not enough to be a serious objection. North of the Peace river swamps are more numerous and the soil is generally third class. Here also is the heaviest timber of the township, poplar from 4 to 15 inches, spruce from 4 to 12 inches and tamarack from 4 to 8 inches in diameter being found. The islands in the Peace river are usually covered with poplar from 4 to 15 inches, spruce from 4 to 18 inches and balm of Gilead from 6 to 50 inches in diameter. Lac d'Ours in sections 3, 4, 10 and 9 would provide about 200 tons of hay of good quality. This supply is eagerly sought after by the residents. The water in the Peace river is good. Several of the residents have wells, the water of these being found usually at a depth of about 20 feet. No water-powers are available. Summer frosts occur. Wood for fuel is plentiful, but no coal nor lignite was seen. Stone for building may be obtained in the bed of the Peace river. No minerals of economic value were noticed. Foxes, rabbits, weasels, prairie-chickens and grouse were found. The Government experimental station is located in section 19 and the locality surrounding this, known as Stony Point, is the most productive of the district.—*J. S. Galletly, D.L.S., 1912.*

The wagon trail from North Vermilion to Hay river passes through sections 3, 4, 5 and 6 of this township. It is in good condition. There is a fair surveyors' sleigh trail crossing the Boyer river in section 17 and going as far as section 27. South of Boyer settlement there are a few open places, especially along the trail, but north of Boyer river the country is usually thickly timbered with poplar up to 12 inches in diameter and spruce up to 15 inches with willow. The soil is generally 4 inches of black loam over a clay loam subsoil. It is second class, but should grow all the crops of the district. Some alkali is apparent south of Boyer river, but there is none north of it. A few hay marshes were seen near the base line, but the yield is not great. This hay is at present cut by the inhabitants of North Vermilion. There is fresh water in Boyer river and in a creek flowing easterly through the northern third of the township, also in Gull lake, but all of these freeze to the bottom in winter. No surface water was found beyond these sources. Summer frosts are liable to occur. No coal was seen but wood for fuel is everywhere plentiful. No minerals of economic value nor stone, except a few loose rocks in the bed of Boyer river, were found. This river is about a chain and a half wide, flows about 2 miles per hour and is about 2 feet deep. No water-power could be developed. Bears, moose, beavers, martens, minks, rabbits, coyotes, foxes, weasels, ducks, geese and prairie-chickens were found. The township, on the whole, is best suited for mixed farming.—*J. S. Galletly, D.L.S., 1912.*

RANGE 14.

This township can be reached by way of the Grand Trunk Pacific railway to Wabamun, and thence by wagon or mail route by Lake St. Ann settlement to White Court at the junction of the McLeod and Athabaska rivers and from

TOWNSHIP WEST OF THE FIFTH MERIDIAN.

RANGE 14.—*Continued.*

there by the old Peace River pack-trail or Canadian Northern railway tote road to range 14; thence by trail south through township 59 to this township. It can also be reached by going farther west on the Grand Trunk Pacific railway, then down the McLeod or the Athabaska river and then by the trail described above leading south into the township. The wagon route is bad during the wet season but the river trip can be made with comparative safety. The soil is mostly a clay loam with a clay subsoil and would be suitable for general farming and stock-raising as grass grows readily wherever there is any opening available. The surface is rolling and slopes chiefly towards the McLeod river. There is good grazing on these slopes, the timber being scattered and replaced by alder and willow scrub and small poplar over the most of the township. The north-westerly portion, which drains to Oldman creek, has more timber but it is of indifferent quality and suitable only for fuel, being standing dry spruce and windfall. There are no hay meadows but there is good grazing on the exposed slopes. There are numerous small creeks of good fresh water draining into the McLeod river. The flow is light during the dry season. The largest creek is from 10 to 13 feet wide and from 12 to 18 inches deep with a current of from 5 to 6 miles per hour. There are no water-powers available as the water supply would not be sufficient during periods of low-water. The general climate is good, the summers being cool and pleasant and favourable to growth. A good deal of moisture falls during June, July and August. Occasional summer frosts occur, sufficient to form thin ice on still water. Dry spruce and tamarack is the most readily available fuel but it does not occur in any great quantity and is situated mostly in the westerly and northwesterly portions of the township. No stone-quarries nor minerals of any kind were seen. Signs of moose and deer were noticed and some grayling were caught in the creeks.—*J. Gibbon, D.L.S., 1913.*

59. This township can be reached either by way of the Grand Trunk Pacific railway to Wabamun, thence by wagon and mail route through Lake St. Ann settlement to White Court, and thence by the old Peace River trail which passes through the northeast corner of the township; or by the Grand Trunk Pacific to Peers and then down the McLeod river to White Court, or to Pedley or Hinton on the same railway and thence down the Athabaska river by boat or scow to within a few miles of the northerly end of the township. In the near future the Canadian Northern railway will have a line passing a few miles north of the township. The soil is mostly a clay loam and would be suitable for the growing of grain and other farm produce. The surface is rough and rolling, and is covered with a heavy growth of timber and thick underbrush. The timber is mostly green poplar, birch, cottonwood, spruce and tamarack from 6 to 12 inches in diameter and would not be considered marketable at present. There are no hay meadows although a good deal of feed is to be found among the timber in places. There is a good supply of fresh water, small running creeks being quite numerous and forming good drainage. Stony creek, from 10 to 20 feet wide and 1 to 2 feet deep, rises in this township and flows northerly through the easterly half of the township into the Athabaska river. It is the main source of drainage for the township. No land is liable to be flooded and no water-powers occur. The summers are cool and agreeable with a good deal of rainfall during June, July and August. Occasional summer frosts occur. There is no dry timber for fuel nor any evidence of coal, stone-quarries or minerals of economic value. Signs of moose were numerous, but very little of any other kind of game was noticed.—*J. Gibbon, D.L.S.; 1913.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 14.—*Continued.*

(*Partial.*)—There is a good wagon trail running from North Vermilion **108.** through this township to Prairie Point in township 107, Range 15. It follows the left bank of Peace river at a distance of about half a mile from the water. This river occupies part of sections 6, 5, 4, 3, 10, 11, 14, 13, 24 and 25. It varies from 30 chains to a mile in width and flows at the rate of from 3 to 6 miles per hour, depending on the height of the water; in places the depth reaches 40 feet. There are several large islands in the river here. Most of the land on the north side of the river is third-class except the large flat occupied by a ranch in sections 10, 15, 14 and 23, and a few places in sections 6, 5 and 4, through which the trail runs. In these localities the land is generally first or second-class. The remaining sections are mostly occupied by hay swamps, especially sections 18, 17 and 16, and to the east by sand ridges and muskegs. No water-power could be developed. The climate is similar to that of the district and summer frosts are likely to occur. Wood for fuel is everywhere plentiful, but no coal of any kind was seen. Stone can be obtained in the bed of Peace river but was not seen elsewhere. No minerals of economic value were found. Foxes, timber wolves, weasels, rabbits, ptarmigans, grouse and prairie-chickens were seen.—*J. S. Galletly, D.L.S., 1912.*

(*Partial.*)—Both branches of the North Vermilion-Hay River wagon trail **109.** pass through this township, one being entirely south of the Boyer river and the other crossing the south branch in section 12, and remaining between the two branches of the river until it leaves the township in section 18; both are good trails. There is some open country south of the north branch of the Boyer river, but otherwise the surface of the country is covered with a growth of poplar up to 12 inches in diameter, and willow, while in the valleys of the branches of Boyer river some spruce timber from 4 to 18 inches in diameter is to be found. The soil is usually about 4 inches of black loam overlying a light sandy clay loam. It is second-class, but should grow all the crops of the district. There is a slight tinge of alkali all over the township, but not enough to do serious harm. Good fresh water is obtainable in Boyer river and in a few creeks in the township. It is likely that it can be obtained everywhere in the township or even in the Fort Vermilion district at a reasonable depth, probably 40 feet. Hay is scarce and there was practically none at the time of survey (June and July). No stone was found with the exception of boulders and loose stones in the bed of the Boyer river. There are no minerals of economic value. No water-power could be developed. Wood is plentiful for fuel, but no coal was seen. The south branch of Boyer river is about 1 chain wide and varies from a few inches to several feet in depth. It flows at the rate of about 2 miles per hour. The north branch is somewhat larger and deeper. These branches meet and leave the township in section 12. Bears, moose, coyotes, wolves, foxes, minks, weasels, rabbits, ducks, prairie-chickens and partridges are found here. The township is best suited for mixed farming.—*J. S. Galletly, D.L.S., 1912.*

RANGE 15.

(*East outline.*)—These townships were reached by way of the Grand **58 to 60.** Trunk Pacific railway and the Athabaska river. The surface is rough, broken and rolling, and is covered with a thick growth of green timber and standing dry timber with willow and alder undergrowth. The soil is mostly a light clay loam and, if cleared, would be suitable for stock-raising or general farming. Poplar, birch, spruce and tamarack from 6 to 12 inches in diameter are found scattered throughout the township. No hay lands were encountered. The water supply is good and permanent. The Athabaska river cuts through the northerly end

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 15.—*Continued.*

of township 60 and is from 10 to 15 chains wide and from 5 to 10 feet deep with a current of from 5 to 10 miles per hour. Oldman creek, a tributary from the south, flows through townships 58, 59 and the southeast corner of 60. It is from 15 to 20 feet wide and from 2 to 3 feet deep with a current of from 5 to 6 miles per hour, and contains excellent water. The land is too rough and rolling to be liable to be flooded. The summers are cool and a good deal of moisture falls during June, July and August. Occasional summer frosts, sufficient to form thin ice on still water, are liable to occur. Winter frosts appear about November 1. Dry wood is the only fuel available. There appears to be a good deal of standing dry timber in the easterly portion of township 58, while townships 59 and 60 seem to contain more green timber but all are thickly wooded. No coal seams, water-powers, minerals nor stone-quarries were seen. Moose seem to be plentiful, but very few signs of other game were noticed, although there has been a good deal of trapping done.—*J. Gibbon, D.L.S., 1913.*

107. The wagon trail from North Vermilion to Prairie Point, which is located in the vicinity of sections 4, 5 and 6, passes through the township in a south-westerly direction. This is a good wagon trail. The soil is nearly all third-class, except in a few places along the trail and at Prairie Point where it is either first- or second-class. Generally speaking, the country is covered with scrub poplar, spruce up to 15 inches in diameter, and willow. In the northern part of the township there are numerous swamps and sand ridges, the latter being covered usually with jackpine up to 18 inches in diameter and sometimes with small poplar. Hay could be cut only in sections 18, 19, 4, 5 and 6. The yield would not be large and it is at present cut by a rancher who has also a part of the open country at Prairie Point under cultivation. The Peace river enters the township in section 19 and flows southerly for about 4 miles, thence easterly along the correction line to section 3, and then turning northwards it leaves the township in section 36. It averages about three-quarters of a mile in width and has many sand bars. The current varies from 3 to 5 miles per hour, and the depth in the deepest places is about 35 feet. The water is fresh but muddy in the spring. Water may be found anywhere in the northern part of the township in the swamps. Summer frosts are liable to occur. No water-power could be developed. No minerals of economic value were found. Wood for fuel is plentiful everywhere, but no coal was seen. Stone for building purposes can be gathered in the bed of the Peace river. Timber wolves, coyotes, foxes, weasels, rabbits, prairie-chickens, grouse, ducks and ptarmigan are found. A large part of the township is unsuitable at present for settlement, being sandy or swampy, but a few good homesteads may be found adjoining the wagon trail.—*J. S. Galletly, D.L.S., 1912.*

108. The north third of this township is reached by a wagon trail from North Vermilion, and, as it contains quite a few open spots, would doubtless appeal to those in search of homesteads. The bush in this part of the township is mostly a light scrubby poplar which could be easily cleared. The soil here is second class, being about 4 inches of black loam overlying a sandy loam subsoil. The south two-thirds of the township is a succession of jackpine ridges and swamps and is practically useless for agriculture.—*J. S. Galletly, D.L.S., 1912.*

109. Two good wagon trails enter this township from North Vermilion. The north trail passes through sections 24, 23, 22, 21, 20 and 19 and leaves in section 30. The southerly road runs south of the base line for about three and a half miles, entering in section 4 and passing through sections 5 and 6. The south branch of Boyer river flows through this township in an easterly direction about one mile

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 15.—*Continued.*

north of the base line. North of the river there are quite a large number of open stretches and it would be possible to enter almost any section here with wagons. South of the river there is more bush and the underbrush is usually more dense. The soil is for the most part about 4 inches of black loam overlying a sandy clay subsoil; near the river, however, there is black loam to a depth of 18 inches or more. It should grow all the crops of the district. South of the Boyer river there is generally a heavy growth of poplar from 4 to 8 inches with a few spruce from 4 to 12 inches in diameter; spruce occurs usually along the river valley. To the north the country is more open though there are occasional bluffs of poplar from 4 to 10 inches in diameter. The water of Boyer river is fresh but beyond this source surface water was scarce. No water-powers are available. Summer frosts are likely to occur. Wood for fuel can be obtained in every section but no coal was found. Stone occurs in the bed of the Boyer river but no stone-in-place was noted. No minerals of economic value were located. Game was scarce, only ducks, geese, grouse, prairie-chickens and rabbits being seen. Hay could be cut in sections 16 and 15 and the vicinity. In the southeast of section 21, the southwest of section 22, the southeast of section 19 and the southwest of section 20 the quality is good but the quantity is small. The township is best suited for mixed farming and there are several large tracts ready for immediate settlement.—*J. S. Galletly, D.L.S., 1912.*

RANGE 16.

Two good wagon trails from North Vermilion pass through this township, one **109.** through sections 1, 2, 11, 10, 15, 22 and 27, and the other through sections 25, 26 and 27. These join at the northwest corner of Child lake and, passing through sections 28, 33, 32 and 31, leave the township in the last section. This is known as the Hay River trail. The township is covered in most places with poplar scrub and willow, also some large poplar up to 12 inches and a few spruce; the latter is found in nearly every section. The eastern half contains some large open stretches. Hay could be cut in the large meadows in section 1 and also south of the base line. There is also a little in the west half of section 34, the east half of section 33, the northwest quarter of section 33, the northeast quarter of section 32 and around Child lake. The yield would not be very great, possibly about 100 tons in section 1 and the neighbourhood, 25 tons in sections 33 and 34, and 50 tons in sections 33 and 32. It is of fair quality. Boyer river is a little over a chain wide and from 6 inches to 6 feet deep with a very slow current. The water in Boyer river is good but that in Child lake is alkaline. We dug two wells near this lake, one in the surrounding marsh and the other about half a mile away. The water in the former became fresh after the well had been open about two weeks, but the latter was still alkaline when we left. Water was obtained at a depth of about 5 feet. There is some swamp land north of the Hay River trail in sections 31 and 32. Water could be obtained here by digging. The soil is usually 3 to 4 inches of black loam overlying a sandy clay subsoil. It should grow all the crops of the vicinity. Wood for fuel is plentiful but no coal nor lignite were seen. Many stones were seen in the bed of the Boyer river. No water-power could be developed. Summer frosts are common. Game was very scarce, only a few prairie-chickens, ducks and rabbits being seen. No minerals of economic value were seen.—*J. S. Galletly, D.L.S., 1912.*

RANGES 17 AND 18.

47 & 48. A Canadian Northern Railway location line runs through this area. It leaves the main line of the railway at a point near its crossing of Wolf creek, which it follows in a southwesterly direction to its source.

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGES 17 AND 18.—*Continued.*

It then crosses the divide to the Pembina river, which it crosses a short distance below the junction of the Little Pembina river with the main Pembina river. A trail follows this location line, and there is a branch trail to Pacific Pass Mines (now called Lovett), which is situated on the Little Pembina river and also on the Alberta Coal branch of the Grand Trunk Pacific railway. As the work to be done this season (1913) was nearer to Lovett, we used this place as our base of supplies. The trail throughout its whole length is generally good, but there are a few bad muskegs which have to be crossed. The portion between Lovett and the area we surveyed is now in fairly good condition, but the remainder of the trail would have to be repaired in places if it is to be used in summer. The soil throughout the district is generally a sandy or a clay loam with more or less black soil on the surface. If the timber were cleared off and the muskegs drained, the soil would grow any kind of crop suitable to the climate. The surface is thickly covered with timber, but because of the numerous forest fires which have swept over this country there is now very little green timber of commercial value. There is considerable *brulé* containing a fair amount of large timber. A large part of this area is thickly covered with small jackpine which nearly always grows up first after a forest fire. In many places, especially where the land is very rich, small spruce are springing up among the jackpine. On some ridges there is a thick growth of small poplar and willow. In many of the muskegs there is some spruce and tamarack up to one foot in diameter. In the valley of Hanlan creek, especially in sections 4 and 5, township 48, range 17, and in sections 32 and 33, township 47, range 17, there is very fine large spruce and jackpine which have escaped the forest fires. No hay meadows were seen, but there is fair pasturage along Hanlan creek and some of the smaller creeks in the district. The water throughout the locality is good, with no signs of alkali. The largest creek is Hanlan creek, which is about 25 feet wide and about 1 foot deep. There are numerous smaller streams and a few small sloughs, but no lakes were seen. The current of the creeks is generally slow, but there are occasional small rapids. There is no land liable to be flooded, except by beaver dams. No water-power could be developed. In summer there is a considerable rainfall, sufficient for any kind of agriculture. The general elevation of the district is over 3,700 feet above sea-level. On account of this high altitude summer frosts are likely to occur. Wood for fuel can be obtained everywhere. Coal may be obtained from Lovett. Indications of coal were found in section 24, township 48, range 18, and in section 8, township 48, range 17, but the size of the seams could not be ascertained without prospecting. Sandstone rock exposures are found at different points along the banks of Hanlan creek. No minerals were noticed. Tracks of moose, deer, rabbits and partridges were numerous. Lynxes, bears and muskrats were seen and beavers were at work along Hanlan creek in section 30, township 47, range 17. Trout are found in the creeks but they do not seem to be very plentiful.—*H. Matheson, D.L.S., 1913.*

RANGE 21.

(*Partial.*)—The only route at present by which the recently subdivided part of this township may be reached is the trail which leads northerly from Peace River Crossing. This is followed to a point about three-quarters of a mile from the village, and from there a sleigh trail, opened up to carry on the survey, leads to the northeast corner of section 14. The surface of this area, excepting those sections adjoining the 22nd base line which are broken by ravines, is undulating and thickly wooded with poplar, scattered spruce and birch. Although the soil is of fair quality, consisting of a layer of black loam to a depth of 4 inches on a clay subsoil, it is, however, considered unsuitable for settlement under existing conditions. During

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 21.—*Continued.*

the survey nothing worthy of note was observed regarding hay marshes, water-powers, stone-quarries or minerals of economic value. As to the water supply and climatic conditions, if the date of the survey (December) is taken into consideration, it is obvious that no reliable information can be furnished in this connection.—*L. E. Fontaine, D.L.S., 1913.*

RANGE 23.

The trail by which this township is reached passes lake Cardinal and entering the township in section 6 continues almost directly north. This trail or wagon road is good in a dry season, but in wet seasons, on account of the marsh or meadow around lake Cardinal, it is quite difficult to pass with loads of any size. There is also a hay trail running directly north from section 1 to lac St. Germain. This road comes from Peace River Crossing following a very good grade up the banks of the Peace river directly opposite the present landing of the ferry. However, in a wet season this trail through township 84 is impassable on account of the muskegs and streams. In winter this is the better trail and is very much shorter. The soil is very good and suitable for mixed farming. There is not very much prairie but a considerable quantity of *brulé* exists which would vanish should another fire run over it. The surface is generally covered with poplar and willow with a number of lakes and muskegs. In section 6 there is an area of about 80 acres of prairie which is the only open spot in the country. Good upland hay can be cut here. Hay can be cut in the following sections: 20 acres in section 1, 80 acres in section 24, 50 acres in sections 4 and 5, while a little is available in sections 12 and 13. This is of the slough grass variety, but is fairly good. In wet seasons it would be rather difficult to cut but not as difficult as on the meadows around the several lakes. Lakes in sections 12, 24 and 25 produce large quantities of hay, but in section 19 of the adjoining township there is a larger area of hay land. Settlers near Peace River Crossing secure hay here in dry seasons. Plenty of water may be obtained during all seasons either from the many lakes or from the creek which flows directly north through the western part of the township. This stream is about 10 feet wide, 3 feet deep and flows at the rate of about 1 mile per hour. The banks are very low until section 20 is reached where they become about 6 feet high; farther north they become still higher. There is little danger of flooding with the exception that the water gathers in the hay meadows. No water-power is available. The climate is very good with no frosts until the middle of August, and these were very slight. Plenty of wood for fuel can be obtained. There are no stone-quarries nor minerals. Prairie-chickens, partridges and ducks comprise the game. Rabbits were very numerous this season.—*G. A. Tipper, D.L.S., 1913.*

There is a fairly good wagon road from lake Cardinal which crosses the southwest corner of the township, and also a pack-trail was cut for survey purposes east to the junction of a creek with Whitemud river in the northeast corner of section 9. The soil in the southwest corner of the township is black loam and clay, and is fairly good farming land, but the remainder is mostly muskeg. All of the land to the north of Whitemud river is muskeg and for a distance of from one-half to 2 miles back on either side it is covered with very thick windfall. The northwesterly corner of the township is very low and at the time of survey was completely covered by water backing up from the river and creeks. There are small patches of prairie in sections 5, 6, 7, 8, 9, 16, 17 and 18 where upland hay may be cut in small quantities. Poplar and willow grow extensively to the south of the river, but to the north there is small spruce and tamarack which is mostly

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 23.—*Continued.*

dead. The water is supplied by the Whitemud river and the above-mentioned tributary. This river enters the township at the northwest corner and first flows south and then southeast to section 10 where it turns and runs northeast, leaving the township in section 24. As far as section 16 the current is sluggish and the banks are low. From this point to where it leaves the township the current is swift, the banks are high, and the valley steadily increases in depth. The river itself averages 100 feet in width and from 3 to 10 feet in depth and had a current of two and a half miles per hour at the time of survey. The creek flows in a northerly direction through a valley about 150 feet deep. It averages 25 feet in width, 3 feet in depth and has a current of two and a half miles per hour. The river will flood all of the land adjoining it in sections 31 and 32. A small amount of power could be developed at some of the narrow rapids by the construction of dams. The climate was very good and no frosts were noticed until August 29. Plenty of wood can be obtained for fuel. No stone-quarries nor minerals were seen. A few partridges, prairie-chickens and geese comprise the game to be found in this township.—*G. A. Tipper, D.L.S., 1913.*

There are two pack-trails entering this township. The one entering at the
87. west boundary of section 30 runs straight east, while the other crosses the Whitemud river at a ford and enters at the south boundary of section 3. Both of these trails are very bad except in winter as there are so many bad muskegs which have to be crossed. This township is of little value; practically the whole area is low and was covered with water during this season which was very wet. The greatest difficulties were experienced in making our way through this country even on foot and it is exceedingly difficult with horses as feed is found only in the marshes. A great portion of the surface is muskeg and that adjoining the Whitemud river in the southwest corner was covered with water from 1 to 5 feet deep. In sections 4, 5 and 6 large lakes were found, but ordinarily these are willow flats. A portion in the northeast of the township is rolling, with muskegs between the hills. There is very little timber; the greater part of the surface is covered with dense willows with some spruce and tamarack. Some small poplar and brulé are found in the northeast part of the township. The only hay is the marsh grass which is plentiful. Water can be found everywhere, the difficulty being to find land without it. Floods are frequent on all the low land as explained above. There are no water-powers, stone-quarries nor minerals. Plenty of wood for fuel is available. Ducks were seen on all the sloughs and are the only game to be found.—*G. A. Tipper, D.L.S., 1913.*

RANGE 24.

The wagon road from lake Cardinal enters this township at the northeast
86. corner of section 12 and running northwesterly crosses the Whitemud river at a ford in the northwest corner of the township. This road is in a fair condition for travelling, but in wet seasons it is not very good on account of crossing so many hay meadows. The ford is not very good and the load had to be rafted across; sometimes the wagon has to be taken apart and rafted, but at the time of low-water the wagon can be pulled across with long ropes, the mud being bad on the shores. The soil is generally a good black loam with a subsoil of clay and would make good land for cultivation in the open patches. The surface is generally slightly rolling and mostly timbered except immediately along the trail where there are many small patches of prairie and meadow land. The timber is chiefly poplar averaging 8 inches in diameter. There are some small clumps of spruce up to 18 inches in diameter along the White-

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 24.—*Continued.*

mud river in sections 31 and 32 but there is practically no merchantable timber. Plenty of hay can be procured from the meadows and prairie along the trail in sections 28, 27, 26, 23 and 24. An abundant supply of water may be obtained from the creeks and the Whitemud river. Two creeks unite in section 28 and discharge into the Whitemud river near the northeast corner of section 36. This stream averages 3 feet wide, is 1 foot deep and flows at the rate of about 1 mile per hour. The Whitemud river, which crosses the northwest corner of the township and also the east boundary of section 25, averages 100 feet wide, is 4 feet deep and has a current of 2 miles per hour. It is dammed in many places by beavers, thus making it sluggish and deep. It floods its banks at the time of high-water, making access to the river impossible. During this summer (1913) the flooding was very bad, all the water-courses and small valleys being flooded. No water-power is available. The climate was good except during the rainy season. During June the river rose 20 feet after a few days of heavy rain. There were no frosts in the summer months. Plenty of dry wood can be obtained for fuel. No coal, stone-quarries nor minerals were noticed. A few partridges, prairie-chickens and geese are the only game. One settler is located on the high land adjoining the river in section 31 where he grows fine potatoes and oats. The grasses for grazing are very good in the vicinity of the trail.—*G. A. Tipper, D.L.S., 1913.*

87. This township can be reached either by a wagon trail which crosses the west boundary near the north shore of Helen lake or by the Fort Vermilion pack-trail which crosses the south boundary of section 5 and runs almost due north through the township. The former is a surveyors' trail and is in fair condition. The soil is a black loam of fair depth with a subsoil of clay. On the prairie openings in sections 18, 17 and 20 some farming can be done but the land is rather low and inclined to be wet especially in bad seasons. The greater portion of the eastern part of the township and all the land south of Beaton creek, except that in sections 5 and 6, is worthless. Most of the land is low and the water collects and forms large marshes, thus making it useless for even hay meadows except in dry seasons. Dense *brulé* exists in the northwestern part of the township. There are considerable areas of prairie in sections 5, 6, 7, 18, 17, 20 and 19. The remainder of the township is covered with willow in the south and burnt poplar and spruce in the north. Hay can be cut on the meadows in sections 5, 6 and 7, also in favourable seasons in sections 17, 18, 19 and 20. This township is well watered by creeks. Beaton creek, which almost parallels the Whitemud river and flows into it in section 1, averages 50 feet wide, is 3 feet deep and has a current of from 1 to 2 miles per hour. This creek is very erratic in its course. The flooding of its banks is the source of great inconvenience. The Whitemud river flows through the southern corners of the township and is about 125 feet wide, is 6 feet deep and has a current of 2 miles per hour. Because of the beavers and several log jams the channel is deepened to 10 or 15 feet in some places. Both the river and creek are bordered by dense willow, which is almost impassable. The lands adjoining the creeks and river were all flooded at the time of survey, and hence on the low meadows, lakes were formed. There are no water-powers, stone-quarries nor minerals. We experienced very fine weather while here with no frosts. Plenty of dry wood is available for fuel. No game was seen.—*G. A. Tipper, D.L.S., 1913.*

RANGE 25.

86. The route to this township is the Whitemud River wagon trail as far as the Whitemud river and thence westerly to Flood lake, passing along its south shore. This trail, except the portion around the lake, is in fairly good condition in wet seasons. The soil is very good with a fair depth of black loam over a clay

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

RANGE 25.—*Continued.*

subsoil. The south portion is on a large range of hills but the remainder of the township is almost level. Fairly good merchantable spruce can be found on the hills in the southern tier of sections and also in sections 7, 8, 11, 12, 13 and 14 but it is not easily taken out as there are no near-by streams. The remainder of the township is covered with poplar and willow. Some small openings of prairie exist in sections 25, 26, 35 and 36. There is little or no hay, but plenty of green feed may be obtained. This township is well watered by the many creeks which are usually about 3 feet wide and 4 foot deep. Parts of sections 28, 29, 32 and 33 were flooded. The Whitemud river which flows through the northeast corner of the township is about 100 feet wide, is 6 feet deep and has a current of 2 miles per hour. When in flood it covers the adjacent land for a distance of about 300 feet. Flood lake was swollen greatly after the rains at the time of survey. There are no water-powers, stone-quarries nor minerals. Wood for fuel is found in many places. Ducks, geese and partridges were the only game seen. The weather was extremely dull and cloudy during the time of survey.—*G. A. Tipper, D.L.S., 1913.*

(*Ranges 25 and 26.*)—The route to these townships is the Whitemud trail
87. which was opened out for wagons almost to the Sixth meridian. This trail is fair. The soil is a good black loam with a clay subsoil. With a little clearing, mixed farming could be carried on along the trail, but not so in the northern portion which is timbered heavily with poplar and some spruce towards the northwest corner. The surface is generally rolling with a fair-sized hill in the northwest part. There is little hay except what may be cut in the openings. The water is of good quality and is quite plentiful. Beaton creek, a stream about 4 feet wide and 2 feet deep with a current of one and a half miles per hour, flows across these ranges. Whitemud river which flows through the southern tier of sections, averages 80 feet wide, is 3 feet deep, and has a current of two miles per hour. The river is quite shallow here as there are not many dams, and many fords exist. Only lands adjacent to the river and creek are liable to be flooded. There are no water-powers, stone-quarries nor minerals. Plenty of dry wood can be obtained. The weather was fine at the time of survey (July and September), and frosts were noticed. Prairie-chickens constitute the game.—*G. A. Tipper, D.L.S., 1913.*

RANGE 26.

(*Fractional.*)—There is a pack-trail running along the Sixth meridian by
86. which this township can be reached. The soil is about 5 inches of black loam with a subsoil of clay. There are very few patches of prairie. The greater portion of the township is covered with poplar from 3 to 10 inches in diameter. Towards the south spruce is found but not in large quantities. Little if any hay could be cut here but there is fairly good grazing along the creeks. The southern portion of the township is on a large range of hills and gradually falls away towards the flat in the vicinity of Whitemud river to the north. Good water is found in the creeks, and beaver dams conserve plenty of it for the season. No land is liable to be flooded. No water-powers, minerals nor stone were seen. The fuel consists of dry wood which may be found in many places. No game was seen.—*G. A. Tipper, D.L.S., 1913.*

87. (See the report on township 87, range 25, west of the Fifth meridian.)—*G. A. Tipper, D.L.S., 1913.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 1.

(*Partial.*)—This township is easily reached at all seasons from Grande Prairie. The Edson-Grande Prairie road enters the township in section 33 and leaves in section 31. This road while used throughout the year is practically impassable during the summer. Throughout this township, however, it is always in fair condition. The surface generally is gently rolling, although sections 13, 14, 23 and 24 are badly broken by the valley of Deep creek. The soil consists of loam from 2 to 4 inches deep overlying a sand or sandy clay subsoil. The country as a whole is rather wet, numerous depressions preventing the drainage of the water; old beaver dams have also contributed to this. Upland grass is luxuriant as is also the growth of pea-vine. The township was formerly heavily timbered with spruce and poplar but this has practically all been destroyed by fire. Windfall is common. The present surface is covered with a heavy growth of poplar, willow, jackpine and alder. In dry seasons hay in small quantities could be cut around many of the small sloughs. Fuel is abundant. No minerals, coal nor stone-in-place were found. Grouse and prairie-chickens were the only game seen. The climate is similar to that of the Grande Prairie district, with perhaps more storms owing to the proximity to the valley of the Smoky river.—*G. W. MacLeod, D.L.S., 1913.*

The Edson-Grande Prairie road enters this township in section 1 and leaves
72. it in section 4. This road is used summer and winter. The surface of the township is generally rolling, but large areas of level wet country occur. The soil consists of from 2 to 6 inches of vegetable loam overlying a clay or sandy clay subsoil. As a whole the township is not unsuitable for agriculture, although considerable drainage would be required and this would be rather difficult. With the exception of the northern third the timber in this township has been nearly all destroyed by fire, the surface at present being covered with poplar, small spruce, jackpine and willows. Fuel is abundant, much of the fire-killed timber being still standing. Grass is very plentiful, small sloughs being dotted throughout the township, but little could be cut except in a dry season. At present hay is cut in section 9, but not in large quantities. Water is plentiful, numerous muskegs conserving the supply. The water in the small creeks of the township is retarded by beaver dams which also account for the numerous beaver meadows. No minerals nor stone-in-place were found. While prairie-chickens and grouse were the only game seen, evidences of moose, bears and deer were noticed. The climate is similar to that of the Grande Prairie district, but is no doubt affected by the proximity to the valley of the Smoky river, where storms seem to be prevalent.—*G. W. MacLeod, D.L.S., 1913.*

RANGE 2.

(*Partial.*)—Only the east half of the north two-thirds of this township
71. was surveyed. The Edson-Grande Prairie road enters the township in section 36 and leaves in section 35. This road is used all the road round. The surface is rolling and in places hummocky, the western portion sloping to the valley of Smoky river, while the southern portion slopes to the valley of Simonette river. As the creeks approach these valleys they run through rapidly deepening and widening valleys, making portions of the township extremely rough. The soil consists of vegetable loam from 2 to 4 inches in thickness overlying a sandy clay subsoil, and

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 2.—Continued.

where not too rough should be suited for agriculture. The surface is covered with patches of timber, chiefly poplar and spruce, with a heavy growth of willows and alders. No timber of any value was found. Windfall and brulé occur throughout. Fuel is plentiful. A small quantity of gypsum was found along the Simonette valley. No coal was seen. Sandstone cliffs also occur along the Simonette river, but none were found in this township. No game was seen. The climate is similar to that of the Grande Prairie district, with perhaps more storms as the immense valley of the Smoky river has the tendency to draw these along its course.—G. W. MacLeod, D.L.S., 1913.

(East half.)—The Edson-Grande Prairie road enters this part of the township in section 3 and leaves in section 10. This road is used all the year round, but during the summer it is all but impassable. Throughout this township, however, it is first class. The surface is inclined to be hummocky, and is dotted with innumerable small sloughs. The western portion is broken by the valley of the Smoky river. The soil consists of from 2 to 4 inches of vegetable loam overlying a sandy clay subsoil, and were it not for the many hollows which are usually filled with water, it would be suitable for agriculture. Grass is abundant although but little could be cut for hay. While formerly heavily timbered with poplar, spruce and jackpine, fires have destroyed all the best timber and at present there is a heavy growth of small poplar, willow and alder with windfall and brulé. Water is plentiful, although there are no creeks. No minerals, coal nor stone-in-place were found. No game was seen. Fuel is plentiful.—G. W. MacLeod, D.L.S., 1913.

RANGE 4.

(East outline.)—The country along these lines is gently rolling in character but broken by the large ravines and valleys of the Smoky river and a large tributary, which crosses the line at the east boundary of section 12, township 69, and recrosses at the east boundary of section 13 of the same township. Smoky river crosses the east boundary of section 36. On the line the valley of this river is 2 miles wide from rim to rim and is 450 feet deep. The timber, which south of the river has been largely fire-killed, consists of spruce, tamarack and jackpine with a few belts of poplar and appears to be of little commercial value. Windfall is excessive. No trails were found approaching the line. Several small sloughs were seen but none of them seemed suitable for hay production. The soil in the uplands is generally too sandy for agriculture. No minerals were noted nor was any game seen.—G. W. MacLeod, D.L.S., 1913.

(North two-thirds.)—This township was reached by a pack-trail which leaves the Sawmill road leading from Grande Prairie in section 15, township 71, range 4. This pack-trail continues south to the Wapiti river, and although very hilly it is fairly good for pack animals. The township is heavily rolling and in some places extremely rough. The Wapiti River valley is from 1 to 2 miles in width from rim to rim and averages 450 feet in depth. The river bed is about 10 chains in width but the volume of water fluctuates a great deal. Bear river joins the Wapiti river in section 36, and has a valley 350 feet in depth where it crosses the north boundary of section 34. The joining of these valleys makes the northeast corner of the township very rough. Small lakes were found in sections 13, 14 and 24 which are unsuitable for hay production. The soil is from 2 to 4 inches of black loam overlying

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 4.—*Continued.*

a subsoil of clay or sand. South of the Wapiti river the country is heavily timbered with spruce, poplar, jackpine and tamarack with patches of brulé and windfall, and seems little suited for agriculture. North of the river poplar predominates and where the land is not broken by ravines it should be fairly suitable for farming. Upland grass, pea-vine and vetches are fairly abundant. Firewood is plentiful. No minerals were found. The swiftly-flowing Wapiti river should produce some power as there is a rapid fall and considerable head could be developed. Bears, moose, grouse and prairie-chickens were the only game seen, bears being very plentiful. Several kinds of trout, and jackfish were found in the Wapiti river.—*G. W. MacLeod, D.L.S., 1913.*

(*South third.*)—The so-called Sawmill road from Grande Prairie runs east-
71. erly through sections 16 and 15 of this township. In section 15 a pack-trail leaves this wagon road running southerly to sections 10 and 3. These trails make this portion of the township readily accessible. The surface generally is gently rolling. Sections 1, 2, 3, 4, 5, 8 and 9 are badly broken by the valleys of Bear and Wapiti rivers. The latter stream, however, does not enter the township. Bear river, a stream about 40 feet in width with a steadily deepening valley as it approaches the Wapiti river, enters in section 9 and leaves in section 3; its valley averages 200 feet in depth and from one-half to 1 mile in width. The soil on the uplands is from 2 to 4 inches of loam overlying a clay or sand subsoil. Large areas of swamp, however, occur, and generally this portion of the township is not good agricultural land. The timber consists of poplar, spruce, tamarack and jackpine, and while heavy it is not large enough to be of any commercial value, although small patches would be of use for rough lumber. No minerals nor water-powers were seen. Hay could be cut around portions of some of the small sloughs and lakes in a dry year. No stone-in-place was found. Bears, moose, grouse, prairie-chickens and ducks were seen and Bear river abounds with jackfish.—*G. W. MacLeod, D.L.S., 1913.*

This locality is readily accessible from either the Edson-Grande-Prairie road or
73. the Spirit River-Grande-Prairie road. The township consists of Kleskun lake with marsh land surrounding it occupying from one-third to one-half of the township; and rolling park-like country to the north and south. Kleskun lake is a shallow body of open water, the limits of which are more or less indeterminate. It is simply a patch of open water in a marsh. The marsh land is dotted with open depressions and is practically impassable. Surrounding this marsh is a strip varying from one-quarter to a mile and a half in width and carrying a growth of slough hay. In dry seasons considerable hay can be cut. This flat of hay marsh is quite distinct from the marsh described above. Surrounding the hay flat and on the same level is a strip of light woods, consisting of poplar, willow, alder and an occasional spruce. An escarpment varying from 20 to 40 feet in height encloses this flat on all sides except the east. Above this escarpment the country is generally rolling prairie dotted with clumps of poplar, willow and alder. The upland soil consists of from 4 to 6 inches of black loam overlying a clay or sandy clay subsoil and is quite suitable for agriculture. The hay flat provides hay in fair quantities every year. At or near the foot of the escarpment on the north side of the lake are round many so-called mud springs which are exceedingly treacherous. Apparently the lake and surrounding marsh could be easily drained by the opening up of Kleskun creek, which at present has a sluggish current due to vegetable growth; this would greatly increase the hay production. No minerals were seen. Fuel is scarce. No water-powers occur. Ducks, geese and swans are very plentiful. Prairie-chickens are found in the uplands.—*G. W. MacLeod, D.L.S., 1913.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 5.

(*East outline.*)—This line runs through a gently rolling country which is covered generally with a growth of spruce and jackpine. The surface has been fire-swept with the result that patches of excessively bad windfall occur. Large areas of spruce and tamarack swamps and muskegs are found along the line. No timber of commercial value was seen. The soil on the ridges is largely sand. Near the northeast corner of section 36 the country becomes drier, and spruce and poplar up to 12 inches in diameter were found. The country on either side of the line seems little suited for agriculture as it is difficult of access and the soil is poor. There are no trails in this territory. No game was noticed, although no doubt bears, moose and deer frequent the neighbourhood.—*G. W. MacLeod, D.L.S., 1913.*

(*North two-thirds.*)—This township can be reached from Flyingshot Lake
70. Settlement either by wagon or by pack-trail. The wagon road touches the Wapiti river just west of the west boundary of section 30. Numerous pack-trails follow along the valley of this river which runs generally east through the township entering in section 19 and leaving in section 24. The river can be forded near the east boundary of section 15 opposite the mouth of Big Mountain creek, a stream averaging about 4 feet in width and flowing from the south. The top-soil is generally a layer of from 2 to 4 inches in depth of loam, sandy loam or sand and is underlain by clay, gumbo or, in a few instances, sand. It would generally be of little agricultural use. North of the Wapiti river sand predominates. The Wapiti river bed averages 10 chains in width. When running full, this stream has a current of 6 miles per hour, and as extremely sudden rises occur, it is a dangerous river. Its valley is from one-half to one and a half miles in width from edge to edge and averages 450 feet in depth. It is very broken as each creek has worn down deep gorges along the valley, the valley of Big Mountain creek being nearly as deep and as rough as that of the Wapiti. Many small sloughs occur and probably in a dry year hay could be cut. The growth of upland grass and pea-vine is good, but owing to the sandy soil it is not as luxuriant as elsewhere in the Wapiti valley. Lignite exposures occur along the Wapiti and Big Mountain creek, seams being 3 feet thick in places. This coal is used by blacksmiths and others in Grande Prairie and is reported as excellent. A few small deposits of marl were noticed around the lakes in the northern part of the township. Game was plentiful, consisting of moose, bears, deer, grouse, prairie-chickens and ducks. In the Wapiti river were found several varieties of trout, grayling, pike, pickerel, perch and suckers.—*G. W. MacLeod, D.L.S., 1913.*

(*South third.*)—This township can be reached directly from the Grande
71. Prairie road by wagon, sleigh or pack-trail. The surface is rolling, being broken by the valley of Bear river, a tributary of the Wapiti river. It enters the township in section 7 and leaves in section 13, the valley steadily increasing in depth but averaging 100 feet deep and half a mile in width. The river itself is about 40 feet in width. The soil is from 2 to 6 inches of loam or sandy loam overlying a sandy clay or sand subsoil, and should generally be suited for agriculture, although rather heavily timbered with poplar, spruce and jackpine. In a dry season small quantities of hay could be cut around many of the small sloughs which were found throughout this portion of the township. While there is little timber of merchantable size and quality, firewood is plentiful. Bear river has a considerable fall and some power could probably be developed if a suitable site were found. No minerals were seen. Ducks, geese, grouse, prairie-chickens and bears were plentiful, and pike were found in Bear river.—*G. W. MacLeod, D.L.S., 1913.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 5.—*Continued.*

By travelling over the Fort St. John trail from Island lake we arrived at our
85. first camping ground which is located where the trail crosses the Montagneuse river. For the most part the trail is good, but permanent bridges are badly needed. The soil throughout the township is excellent and is most suitable for agriculture. The surface is generally covered with poplar and willows with a few scattered willow swamps. These swamps are very wet, but could generally be drained at small expense. In some places there are small clumps of spruce, but not in sufficient quantity to be of any commercial value. There is no hay of any importance, but the pasture is excellent wherever the brush and timber is not too dense. The water is fresh and during this season there has been an abundance of it. The main source is the Montagneuse river, which is almost 15 feet wide and has an average depth of 4 feet and a current of 3 miles per hour. The land is not liable to be flooded as the river banks are fairly high. No waterfalls nor rapids exist and very little power could be developed by erecting dams. The climate is much the same as that of southern Alberta, except that summer frosts are frequent. This is accounted for by the many small swamps, and in my opinion the frosts were more frequent this year on account of the wet season. There were no signs of coal either on the surface or along the beds of the streams and therefore wood is the only available fuel at present. No stone-quarries nor minerals were found. The game consists of a few moose, bears in large numbers, fur-bearing animals and several species of grouse and ducks.—*J. A. Buchanan, D.L.S., 1913.*

86. We reached this township by the Fort St. John trail which crosses the southwest corner of the township. This portion of the trail is very bad in the summer on account of the swamps and sloughs which are caused principally by beaver dams. There is a summer trail, however, which is much better; it passes east of most of the swamp and joins the main trail farther north. A wagon road was cut from the Fort St. John trail to our camp in the southeast quarter of section 28, the junction of the two trails being situated in the northeast quarter of section 18. This road is all located on high land and is in excellent condition. The soil in this township is black loam with a clay subsoil and is very suitable for agriculture. The surface for the most part is timbered with poplar up to 1 foot in diameter with an occasional spruce. As the altitude rises to the north, spruce becomes more in evidence until section 36 is reached, the west half of which is heavily timbered with spruce up to two feet and a half in diameter. There are open spots scattered here and there throughout the township, but no large tracts of prairie exist. Most of section 4 is low and the greater portion of it is covered with a willow swamp. There is also a large willow swamp which covers the west halves of sections 1 and 12, the east halves of sections 2 and 11; the southwest quarter of section 13, portions of the east half of section 14 and a portion of the south half of section 23. There is very little hay, but the pasture is exceptionally good in all the open places, and in most of the timbered parts where the undergrowth is not dense. The water is fresh. There are no falls and no water-power can be developed since the streams are all small and would dry up in a dry season. The climate is much the same as that in the more southerly portions of the province, but at present summer frosts are frequent. There are no surface indications of coal so at present wood is the only available fuel. No stone-quarries were found and no minerals are in evidence. Game consists of moose and bears in large numbers, several species of grouse and quite a number of fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

(*East outline.*)—These townships are rough and have a gravelly soil which
87 & 88. is not suitable for agriculture. They are heavily timbered with poplar, spruce and jackpine running as high as 20 inches in diameter. The water

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 5.—*Continued.*

supply is dependent on small creeks and in all probability is not permanent. There are no falls nor rapids, and no power could be developed by the erection of dams. There is no hay. The climate is much the same as that of other parts of the province except that summer frosts are frequent. There are no stone-quarries nor minerals. No coal was found but there is an abundance of wood for fuel. The game consists of a few moose, bears and several species of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

RANGE 6.

69. (*East outline.*)—No trails were found crossing this line but the adjoining country can be reached from Flyingshot Lake Settlement, there being numerous wagon roads from that point to the Wapiti river. South of the river pack animals were required. The country along the line is nearly level and is generally wet. The timber consists of jackpine, tamarack and poplar, most of which is fire-killed resulting in heavy windfalls. Several small creeks tributary to the Wapiti river cross the line, the largest being about 12 feet in width crossing the east boundary of section 13. The soil consists of sand or clay and is not suitable for agriculture. Fuel is abundant. Grass and hay are scarce. No minerals were found nor was any game seen.—*G. W. MacLeod, D.L.S., 1913.*

70. (*North two-thirds.*)—Many wagon roads run from Flyingshot Lake Settlement to the Wapiti river, thus making this township readily accessible. The surface is gently rolling but badly broken by the valley of Wapiti river which enters in section 18 and leaves in section 24. This valley is from 1 to 2 miles in width and would average 450 feet in depth. The soil generally is too sandy for agriculture, although the northern tier of sections contains some very good land. Hay is at present cut in sections 33, 34 and 35 around small lakes and sloughs. South of these sections the growth is not so luxuriant. The timber consists of poplar, spruce and jackpine, much of which has been fire-killed and, except in small patches, is of little commercial value. Water is plentiful and of good quality. Fuel is abundant. Lignite is mined in section 24, where a small outcrop occurs on the river. Several exposures of soft sandstone and shale occur along the river. Trout of several varieties, jackfish and suckers are found in the Wapiti river. The game, however, has largely been exterminated, although a few evidences of moose and bears were found. Prairie-chickens and ducks are fairly plentiful.—*G. W. MacLeod, D.L.S., 1913.*

71. (*South third.*)—Flyingshot Lake Settlement is located in this portion of the township, and is approximately 4 miles from Grande Prairie. Wagon trails are plentiful, radiating from Flyingshot Lake Settlement. The surface is gently rolling and covered with poplar, willow, jackpine and spruce. The soil consists of from 2 to 6 inches of black loam overlying a sandy clay subsoil and, as a whole, is not unsuitable for agriculture. Small open patches occur. Hay is plentiful. Fuel is sufficient. No minerals nor stone-in-place were seen. Bear river flows through sections 11, 12 and 1, its valley being 30 chains in width and up to 100 feet in depth. This stream runs nearly dry in some seasons, but at the time of survey it was found to be 30 feet in width and 2 feet in depth. Water is plentiful and of good quality. The only game seen was prairie-chickens and ducks. Jackfish are found in the river.—*G. W. MacLeod, D.L.S., 1913.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 6.—*Continued.*

(*North third.*)—The subdivided part of this township is easily accessible by a good wagon road from Spirit River Settlement leading to and connecting the various farms situated on the outskirts of this subdivided area. Its surface is slightly rolling and, excepting a narrow rim of willows and fire-killed poplar along the north boundaries of sections 31 to 36, is mostly open. The soil is a rich black loam of an average depth of 6 inches overlying a clay subsoil. It may be rated as second class and is well adapted to farming. No hay marshes of any extent were noted but the productive qualities of the soil are such that one can always harvest a good supply of fodder to tide over the winter months. Owing to the total absence of watercourses the only source of supply is from a few scattered marshes, and when procured it is soft and free from alkali. Judging from appearances water could be obtained by digging at a very few feet beneath the surface. A limited supply of fuel consisting of fire-killed poplar is at present available along the north boundary of the township. No coal has been found, and before many years fuel will have to be drawn from township 79, range 7. The climatic conditions in this vicinity are rather changeable and from the information received it is evident that although summer frosts are not of yearly occurrence, nevertheless the district is not entirely free from them. No water-powers, stone-quarries nor minerals of economic value have been noted. Regarding game, prairie-chickens and partridges are the only species worth mentioning.—*L. E. Fontaine, D.L.S., 1913.*

(*South third.*)—This portion of the township is easily accessible by a good wagon road leading from Spirit River Settlement to the northern part of township 78, range 6, and thence by either of three wagon trails which are used by settlers of adjoining townships to haul hay from various parts of this township. The surface is traversed by three deep ravines; the first crosses section 34 and part of section 35 in a southeasterly direction, the second intersects the west boundary of section 18 bearing easterly, while the third crosses section 7 and the west part of section 8 in a course a little north of east. Apart from these ravines but including the intervening area between them, the surface is generally slightly rolling, and in the subdivided part it is mostly open with a few scattered bluffs of poplar and willows. There are numerous marshes of variable extent where hay of good quality and in quantity can be had. The soil is generally a layer of black loam averaging 6 inches in thickness overlying a clay subsoil. It is chiefly rated second class and is suitable for farming. Apart from the small streams flowing into the above-mentioned ravines, an abundant supply of soft water free from alkali can be had in the several marshes. Wood for fuel as well as for building can be obtained in the north part of sections 7 and 8. The climatic conditions are those generally prevailing in the adjacent townships. Summer frosts, while not unknown, are not, however, of yearly occurrence. No coal, stone-quarries, minerals of economic value, nor water-powers were noted. A few partridges appear to be the only game in the locality.—*L. E. Fontaine, D.L.S., 1913.*

We reached this township from township 86, range 5, by travelling along the Fort St. John trail to its junction with a wagon road we had cut out. This junction is located in the southwest quarter-section of section 33, township 85, range 5, and the wagon road bears westerly, crossing the east boundary of the southeast quarter of section 36 of this township and thence in a southwesterly direction to our camp, located in the southwest quarter of section 15. Portions of the road pass through swamps and in these places the road was bad. The soil is black loam with a clay subsoil and is suitable for agriculture. However, practi-

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 6.—*Continued.*

cally the whole portion included in the westerly two tiers of sections is low, the greater portion of it being muskeg and swamp. The timber is generally poplar up to 10 inches in diameter, except in the muskegs and swamps, where scrubby spruce and tamarack is found. There are scarcely any open patches in the township, and therefore no hay areas of any importance are found. The water is fresh, but the creeks are small and the only permanent supply is in the swamps and muskegs. No land is liable to be flooded. No falls nor rapids exist and no power can be developed. The climate is much the same as that of southern Alberta with more frequent summer frosts. The only available fuel is wood, and no stone-quarries nor minerals are found. The game consists of bears, moose, partridges and some small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

86. From the southwest quarter of section 31, township 85, range 5, situated along the Fort St. John trail, we travelled in a northwesterly direction along a wagon road which we had cut out to our camp located in the northeast quarter of section 4 of this township. This road for the most part is good, but a few small swamps had to be crossed. We also located a camp in the southeast quarter of section 21 which was reached by travelling along the Fort St. John trail and by cutting a short wagon road south from the main trail down to a small slough or lake. The soil of this township is mostly a black loam with a clay subsoil, and is excellent from an agricultural standpoint. It is for the most part covered with small poplar and bunch willow brush. There are, however, prairie patches here and there as well as quite a number of sloughs. There is no timber of any commercial value. Hay could be cut in many open places and possibly along some of the sloughs in a dry season. The upland hay is of good quality, being composed of prairie grass and pea-vine while that around the sloughs is the ordinary slough grass. A creek furnishes the principal water supply. It is from 16 to 20 feet wide and about 4 feet deep. The water is fresh and the current is about 3 miles per hour. In the northern part of the township, however, there are a number of beaver dams which cause the stream to be sluggish, and a great many acres of land, which would otherwise be high and dry, are flooded. The water supply, judging from this season, is permanent. There are no falls nor rapids, and no water-power could be developed. The climate is similar to that of the more southerly portions of the province, except that summer frosts are rather frequent. Wood is the only fuel, there being no surface signs of coal. No stone-quarries exist and there are no minerals in evidence. The game consists of bears, a few moose and a number of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

(East outline.)—The soil of this township is black loam with a clay subsoil and is suitable for agriculture. A portion in the northeasterly corner of the township is timbered with poplar and scattered spruce up to 15 inches in diameter, but the remainder is covered with scrub poplar and willow with small scattered prairie spots. The creeks are all small and the water supply is not permanent. No falls nor rapids exist. There can be no power developed by the erection of dams. A limited amount of hay could be cut in the small prairie patches. The climate is warm with occasional summer frosts. There are no stone-quarries nor minerals. No coal was found but there is an abundance of wood for fuel. The game consists of bears, a few moose and several varieties of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

(East outline.)—The soil of this township is gravelly and covered with moss almost everywhere, and may be said to be very poor for agriculture. About two-thirds of the surface is rough and timbered with spruce, poplar and jack-pine running as high as 20 inches in diameter, while the remainder is covered with

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 6.—*Continued.*

scrubby timber. The water is supplied by numerous small streams which may or may not be permanent. There is, however, a larger stream crossing the east boundary of section 25, which is 20 feet wide, 3 feet deep and has a current of two and a half miles per hour. There are no falls nor rapids, and no power can be developed by the erection of dams. There is no hay. The days are hot and the nights are cool. Summer frosts occur. There are no stone-quarries nor minerals. No coal was found but there is an abundance of wood for fuel. A few moose and bears and numerous small fur-bearing animals are to be found.—*J. A. Buchanan, D.L.S., 1913.*

RANGE 7.

(*Outlines.*)—The soil of this township is black loam with a sandy clay sub-
85. soil and is very suitable for agriculture. The whole surface is densely wooded with poplar up to 12 inches with scattered spruce and jackpine running as high as 15 inches in diameter. No hay is found. The creeks which pass through the township are all small with deep ravines towards the south boundary. The water is fresh, but the supply is not permanent. The land is not liable to be flooded. There are no rapids nor waterfalls, and no power could be developed by the construction of dams. Summer frosts are frequent. No coal, stone-quarries nor minerals were found. There is an abundance of poplar and spruce for fuel. The game consists of a few moose and bears with a number of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

From our camp which was located in the northeast quarter of section 4 of
86. the township to the east, we travelled along a wagon trail which we had cut out to our next camp in the northeast quarter of section 9 of this township. This trail is rather bad on account of a number of sloughs and swamps that had to be crossed. We also located a camp in the northwest quarter of section 34 which was reached by cutting a trail south from the Fort St. John trail. The soil is black loam with a clay subsoil and is very good for agriculture. The surface is covered with small poplar and willow. A few prairie spots occur here and there, and there are many willow swamps and sloughs. No timber of any commercial value exists. There was very little hay, but this was an exceptionally wet season, and possibly in a dry year hay could be cut around some of the sloughs. The water supply is dependent on a large stream which flows westerly across the southern sections, and has a few small tributaries. The water is fresh and the supply seems to be permanent. The streams flow at a rate of about two and a half to 3 miles per hour, but there are no waterfalls nor rapids and no power can be developed. The large stream mentioned above is about 16 or 20 feet wide and 5 feet deep, while all the other creeks are small. The climate is warm in summer with cool nights and summer frosts are frequent. The poplar furnishes the only available fuel, and from surface indications there is no coal. No stone-quarries nor minerals are found. The game consists of bears, a few moose, beavers and other fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

From our camp located in the southeast quarter of section 33, township 87,
87. range 8, we moved south along our wagon trail to a point in the northwest portion of section 15, from which we cut a wagon trail in a northeasterly direction and located another camp in the southeast quarter of section 28, township 87, range 7. We also cut a wagon trail south to the Fort St. John trail. These trails were for the most part high and dry. The soil is a good black loam with a

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 7.—Continued.

clay subsoil and is most suitable for agriculture. The surface is covered with small poplar and willow, with scattered prairie spots. Portions of sections 11 and 12 are covered with spruce and tamarack swamps, caused by beaver dams. There is a small amount of timber in these sections consisting of some spruce and tamarack running as high as two feet and a half in diameter. Some high grade upland hay could be cut in the prairie patches. There are two main creeks running through the township and these with their many branches furnish a plentiful supply of fresh water. In a very dry season, however, these creeks may go dry. Each of the main creeks is about 12 feet wide and 4 feet deep, and has a current of about two and a half miles per hour. There are no falls nor rapids and no power can be developed. The climate in summer is hot with cool nights and summer frosts are rather frequent. There are no indications of coal, and wood is the only fuel available at present. There are no stone-quarries nor minerals of economic value. The game consist of bears in large numbers, a few moose, and deer and various kinds of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

(East outline.)—The soil of this township is for the most part gravel and sandy clay and not well suited for agriculture. The surface is densely wooded, the northeasterly part being a second growth of small jackpine and spruce, while the southwesterly portion is heavily timbered with poplar, spruce and jackpine up to 18 inches in diameter. Numerous small creeks, of which the permanency is doubtful, furnish the water supply. There is also a lake in section 30. There are no waterfalls nor rapids and no power can be developed. No hay can be cut. The days are warm with cool nights, and summer frosts are frequent. No stone-quarries, coal nor minerals were found, but there is an abundance of wood for fuel. The game consists of a few moose, bears and a number of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

RANGE 8.

(Outlines.)—The soil of this township is a black loam with a sandy clay subsoil and is very suitable for agriculture, but the whole township is densely wooded with poplar, jackpine, spruce and willows. The southern portion is very rough and covered for the most part with poplar and spruce up to 18 inches in diameter, the greater portion of which, however, is dead. As one goes north the timber gets smaller. All the creeks are small with deep ravines, the largest one which crosses section 5 being 16 feet wide and a foot and a half deep. The water is fresh but the supply is not likely to be permanent. There are no waterfalls nor rapids and no power can be developed by the erection of dams. The climate is much the same as that of the more southerly portions of the province but summer frosts are frequent. No coal, stone-quarries nor minerals were found, but there is an abundance of dead spruce and poplar for fuel. The game consists of a few moose and bears with some small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

From our camp located in the northeast quarter-section of section 9 of the township to the east, we cut a wagon trail to our next camp which we located in the southeast quarter of section 22 of this township. This trail followed along the valley of quite a large stream for the most part and was therefore rough and hilly. The trail leading to our camp in the northwest quarter of section 27 also had some very bad hills. The soil is a black loam with a clay subsoil and is most suitable for agriculture. There is very little prairie and most of the surface is covered with

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 8.—*Continued.*

light poplar and willow. However, the southern part of the township for a mile and a half north of the south boundary is densely wooded with poplar, spruce and jackpine up to 12 inches in diameter. A large willow swamp covers most of sections 33 and 34. Hay may be cut only in the small prairie spots which are few. The large creek mentioned above with its tributary streams furnish the water supply. It varies from about 20 feet in width at the east outline to about 50 feet at the west boundary. Two creeks flow into this stream from the north, one in section 20 and the other in section 21, each being about 10 feet wide and 4 feet deep. The current of these streams varies from three to three and a half miles per hour. The water is fresh and the supply seems to be permanent. No land would be flooded because of the deep ravines. There are no waterfalls nor rapids but a small amount of power might be developed by the building of dams in the creeks flowing from the north. The climate is warm with cool nights, and summer frosts are frequent. There is no coal, wood being the only available fuel at present. No stone-quarries nor minerals of economic value were seen. The game consists of bears, moose, deer and a few small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

From our camp located in the northwest quarter-section of section 27, **87.** township 86, range 8, we travelled northward across a large willow swamp for about a mile and then over a level country covered with willow brush to a point on the Fort St. John trail in the southeast quarter of section 10 of this township. We also cut a trail north and located a camp in the southeast quarter of section 33. Both these trails were good with the exception of the portion of the former which passed through the willow slough. The soil is a black loam with a clay subsoil and is most suitable for farming. The south portion of the township is wooded with willow and small poplar. The portion north of the north chord, however, is more heavily wooded with poplar and spruce running as high as 2 feet in diameter. In the southerly part quite a few small prairie spots exist, and in these a good quality of hay could be cut. The township depends for its water supply on three creeks flowing from the north. Each creek is about 8 feet wide and 3 feet deep with a current of about two and a half miles per hour. The water is fresh, but it is a little doubtful about the supply being permanent in a dry year. No land is liable to be flooded. There are no waterfalls or rapids from which power could be developed, nor would it be feasible to build dams for this purpose. The climate is much the same as that of the more southerly portions of the province, but summer frosts are frequent. There is no coal and wood is the only fuel available at present. No stone-quarries nor minerals of economic value exist. The game consist of bears, moose, a few deer and several kinds of small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

(*East outline.*)—The soil of this township is black loam with a clay subsoil **88.** in certain places, but a great deal of the soil is gravel on stony clay and is therefore very poor for agriculture. The northern portion is chiefly muskeg while the southern portion, being in the Clear hills, is very rough. The surface is fairly heavily wooded, and in the hills spruce, poplar and jackpine run as high as 18 inches in diameter. There is no hay. The small creeks from the hills furnish the water supply and some of these may be permanent springs. There is also a lake in section 25 which covers the greater portion of the east half of the section. There are no falls nor rapids and no power can be developed. Summer frosts are frequent. No coal, stone-quarries nor minerals were found, but an abundance of wood for fuel may be obtained. The game consists of bears, moose and small fur-bearing animals.—*J. A. Buchanan, D.L.S., 1913.*

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RANGE 9.

69. This township can be reached by a pack-trail which leaves the Beaverlodge trail in section 5, township 71, range 9, and runs southwesterly to the mouth of the Redwillow river. At this point the Wapiti river can be forded, and the trail, crossing the north boundary of section 33 of this township, continues southwesterly along Iroquois creek. While not good, this trail is passable for pack-horses. The eastern and northern portions of the township are broken by the valleys of Iroquois creek and the Wapiti river; the remainder is gently rolling and heavily timbered with spruce, poplar, jackpine and dense willow. The level nature of the uplands causes large areas of wet country, the soil seeming to hold the water. The soil consists of from 2 to 6 inches of vegetable loam overlying a clay, sandy clay, or sand subsoil, but it is generally too wet for agriculture. Iroquois creek is a stream about 30 feet in width with a steadily deepening valley as it approaches the Wapiti river which it enters in section 33. The Wapiti river is from 6 to 10 chains in width, and its valley is from one to one and a half miles in width and averages 450 feet in depth. Numerous small creeks are tributary to these streams. Upland grass and pea-vine are fairly abundant, but no hay sloughs of any practical value were found. Fuel is abundant. Exposures of sandstone and shale occur along the Wapiti river. Several outcrops of coal or lignite were also noted. The climate is similar to that of the Grande Prairie country, the long summer days offsetting the shortness of the season. The only game seen was bears and moose, and in the Wapiti river several varieties of trout, jackfish and suckers were found. Many varieties of snakes were seen along the banks of the river.—*G. W. MacLeod, D.L.S., 1913.*

RANGE 10.

69. This township can be reached from the pack-trail which continues south from the wagon road described in the report on township 70, range 10. While the upland in this township is gently rolling, it is badly broken by the valley of the Wapiti river which enters in section 7 and leaves in section 25. This valley is from one to one and a half miles in width and would average nearly 400 feet in depth, in many places being precipitous. The river bed averages 10 chains in width but the flow of the river is very erratic due, no doubt, to the burnt-over nature of its watershed, any rainfall being accompanied by sudden rises. Nose creek enters the Wapiti from the south in section 16. Its valley which is nearly as deep as that of the Wapiti cuts up the southwest corner of the township badly. The many small creeks entering the Wapiti have cut out large valleys for themselves as they approach the river. The soil consists of vegetable loam from 2 to 4 inches deep overlying a clay, gumbo, sand or gravel subsoil and is generally quite unsuitable for agriculture. Fires have in places entirely destroyed the top-soil, leaving the unproductive subsoil exposed. The timber which consisted of jackpine, spruce and poplar has been largely destroyed by fire, only that of a few small muskegs having escaped. The country as a whole seems very wet, the soil holding water in places. Feed for horses is not plentiful. Heavy willows, small poplar and spruce are found. No hay sloughs of any consequence were seen. Small seams of lignite are found along the Wapiti river. Sandstone occurs practically all along the river, although in many places it is covered with detritus. Game is scarce, having probably disappeared after the fires. Fish are plentiful in the river. The climate is probably more extreme than that of Grande Prairie, and many storms apparently occur here which do not strike that district.—*G. W. MacLeod, D.L.S., 1913.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

RANGE 10.—*Continued.*

(*South two-thirds.*)—A wagon road from Halcourt and lake Saskatoon runs to the Redwillow river in section 21 and is generally in fair condition. From this point a pack-trail runs due south. The Redwillow river, a stream about 100 feet wide, runs easterly through this township, entering in section 19 and leaving in section 13. The valley of this river averages 350 feet in depth. The elevation of the upland north of the river is considerably less than that to the south, the latter forming a divide between this river and the Wapiti. The upland away from the edge of the valley is gently rolling. The soil north of the river consists of from 2 to 8 inches of vegetable loam overlying a clay or sandy clay subsoil, and is quite suitable for agriculture. South of the Redwillow river fires have destroyed the timber and much of the vegetable soil, leaving exposed the unproductive subsoil consisting of clay, sand or gravel; this portion is unsuitable for agriculture. North of the river the country is fairly heavily wooded with poplar and willow, and a good growth of grass and pea-vine is found, while south of the river the timber consisting of spruce, jack-pine and poplar has been nearly all fire-killed and the surface is now covered with a second growth of poplar, jackpine and willow. Coal is mined from small outcrops along the Redwillow river and is used locally. Sandstone and shale occur along the river valley the sides of which in places are precipitous. Large game has been practically exterminated. Prairie-chickens and grouse are plentiful, and the river is well supplied with fish.—*G. W. MacLeod, D.L.S., 1913.*